

Harrell



THE ARMED FORCES COMPTROLLER



WASHINGTON, D. C.

SEPTEMBER 1959

VOLUME IV

NUMBER 3

Return postage guaranteed — P. O. Box 1747, Washington 13, D. C.

Maurice W. Harrell
3945 Conn. Ave., N. W., Apt. 407
Washington 8, D. C.

Announcing

a relatively short course in certain important aspects of **MANAGEMENT METHODS FOR ACCOUNTANTS**

For

Public accountants who want to provide broader management services to clients

Private accountants who want to serve management better and prepare for top management positions, and

Others who aspire to top management positions

PARTIAL LIST OF SUBJECTS

Four techniques of prediction
Decision-making methods
Methods for planning
Scatter diagrams with built-in confidence limits
Predicting changes in long-term trends
Special costs for special purposes:
Opportunity costs
Marginal costs
Direct costs
Controllable costs
Variable costs
Imputed costs
Principle of exceptions
Financial planning
Business relationships and logs
Trend analysis
Standards and directions

• This new IAS MANAGEMENT TRAINING COURSE teaches how to understand and use the tools of business measurement. Knowledge of these tools is essential to the accountant who wishes to serve management better, and such knowledge is just as essential for a manager or any business employee who has management aspirations.

• The advanced subjects are taught by graphic methods. No mathematical knowledge beyond business arithmetic is required. A wealth of illustrative examples and numerous diagrams simplify the explanations.

• The complete course consists of 55 study assignments, each with an examination to be solved and submitted for correction and grading by CPAs and returned to you with a model solution.

• The subjects covered are:

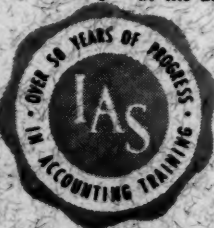
Basic Accounting — 25 assignments
Economics — 10 assignments
Management Control — 20 assignments

• Either or both of the first two sections may be eliminated (with a corresponding reduction in tuition) by those who have had recent equivalent training and have no need for refresher courses on those subjects.

• The IAS MANAGEMENT TRAINING COURSE is available to individuals and also to firms which are interested in enrolling a group of employees at a special group discount.

• If you would like further information about the course and a complimentary copy of one of the Management Control assignments, address your letter to the Secretary, IAS, at the address below.

IAS IS AN ACCREDITED
SCHOOL, ACCREDITED BY
THE ACCREDITING COUNCIL
OF THE NATIONAL BOARD
OF STUDY COUNCIL



INTERNATIONAL ACCOUNTANTS SOCIETY, INCORPORATED

A Home Study School Since 1903

709 E. Charest Blvd.
QUEBEC 2, P.Q.

1815 Yonge St.
TORONTO 7, ONT.

Ste. 8, 1265 Stanley St.
MONTREAL, P.Q.

902 Rogers Bldg.
VANCOUVER 2, B.C.

226 Scotia St.
WINNIPEG 4, MAN.

AMERICAN SOCIETY OF MILITARY COMPTROLLERS

NATIONAL



COUNCIL

LIEUT. GENERAL WM. S. LAWTON, USA
COMPTROLLER OF THE ARMY
NATIONAL PRESIDENT OF ASMC
THE PENTAGON, WASHINGTON 25, D. C.

Greetings from Lieut. General Wm. S. Lawton
to the Third National Convention

The Third National Convention of our Society is scheduled to be held in Washington, D. C., on the 22nd of October. Each of these Conventions should be a milestone marking the progress of our Society from year to year. Last year's Convention was eminently successful from the standpoint of the thought engendering ideas propounded by the distinguished speakers and from the discussions that followed.

We are working to make this year's Convention an even better one from the standpoint of speakers, and we are also working to draw up and present a better and more effective National Constitution and By Laws to present for approval of the delegates.

We can report to the 1959 Convention that several paid advertising accounts have been obtained for publication in our journal "The Armed Forces Comptroller" and that efforts are being made to secure more. We cannot report a record of phenomenal growth of Chapters and membership like we reported to the 1958 Convention. There are many reasons for this leveling off of growth; one is the need for revision of the Constitution and By Laws to recognize the needs of a larger organization. These needs appear to be a more flexible governing council with a wider distribution of specific responsibilities to a greater number of officials, and at the same time a better representation of the highest professional talent in the Services as members of our Society and on the Council. We hope this reorganization will, among other objectives, create a better promotional effort from both the National and the regional organizations.

In part, we have also felt a competition for the interest of our prospective field of membership from similar professional organizations. However, I feel that we have a real and close community of interest within and between the comptroller-ship personnel of the various military services to a degree which we do not have with any other group.

This thought I would like to pass on to my successor and his associates: That we have available by means of our Society a constant line of communications by which we can air, discuss, and thrash out our common problems and the best solutions to these problems.

To the officers and members of the National Council and to the many members of the Society who have contributed to the success of the American Society of Military Comptrollers during my two years as President, I wish to extend my heartfelt thanks.

Sincerely,

A handwritten signature in dark ink, appearing to read "Wm. S. Lawton". The signature is stylized with a large, sweeping initial "W" and a long, horizontal stroke at the end.

WM. S. LAWTON
Lieut. General, USA
National President

NATIONAL OFFICERS

Lieut. Gen. Wm. S. Lawton, USA
President

Rear Admiral G. F. Beardsley, USN
Vice President

Dr. Claude D. Baldwin (Air Force)
Vice President

Leonard W. Hoelscher (Army)
Vice President

Brig. Gen. H. Nickerson, Jr., USMC
Vice President

Captain Paul E. Trimble, USCG
Vice President

Oscar C. Lightner (Navy)
Secretary

Lt. Col. Samuel V. Anthone, USAF (Ret.)
General Counsel

Joseph D. Lubin (Army)
Comptroller

Kenneth E. Dunlap (Navy)
Editor

ASS'T. NATIONAL SECRETARIES

Francis B. Collins, Army
Leonard P. Lyon, Navy
Stephen L. Clark, Marine Corps
Lt. Cdr. Robert LoForte, Coast Guard

PAST PRESIDENTS

Vice Admiral Edward W. Clepton, USN
Lieut. Gen. William D. Eckert, USAF
Maj. Gen. Bickford E. Sawyer, USA (Ret.)
Col. John E. Bodle, USAF (Ret.)
Major Joseph C. Armour, USA

OTHER COUNCIL MEMBERS

Major Garnett M. Burum, USAR
Norwood P. Cassidy (Navy)
Thomas B. Crossan, Jr.
Col. George W. Davis, USAF
Brig. Gen. Joseph F. Delaney, USAF
Lt. Col. Maurice Edelman, USA (Ret.)
Major Richard E. Ellis, USA
Major Jules V. Fish, USAF
Col. A. E. R. Howarth, USA
Lt. Col. Herman A. Jones, Jr., USA
Robert D. King (Army)
D. F. McGrath
Col. Ernest L. Osborne, USAR (Hon. Ret.)
Major Louis A. Oswald, USAF
John H. Prince (Coast Guard)
Col. Frederick B. Smith, USA (Ret.)
Raymond A. Soderberg (Army)
Capt. Frank G. Springer, USN
Lt. Col. Herman B. Wild, USA
Major Walter H. Zwinscher, USAF

EDITORIAL STAFF OF

"THE ARMED FORCES COMPTROLLER"

National Editor

Kenneth E. Dunlap
Navy

Associate National Editors

J. Paul Kingston John C. Jeffers William Scheela
Army Navy Air Force

Edward T. Beese
Marine Corps

John A. Johnson
Coast Guard

Regional Editors

Melvin K. Zucker
Washington, D. C.

Wesley W. Griffin Jane E. McCall Patrick G. Clancy
Memphis, Tenn. Denver, Colo. Leesville, Va.

Kenzo Uyeon Marshall H. Norton Irving R. Ehrlich
Aberdeen, Md. San Antonio, Texas Ryuku Islands

VOLUME IV September 1959 Number 3

"THE ARMED FORCES COMPTROLLER" is a forum for the presentation of the activities of Military Comptrollership. The views set forth in articles, or other matter in this publication, are those of the respective authors; they do not necessarily represent the views of the Government Agency, the Armed Forces or the National Council of the American Society of Military Comptrollers.

"The Armed Forces Comptroller" is published four times a year — March, June, September, December. Subscription rates: Members \$2.00 per year, non-members \$3.00 per year.

Copyright by AMERICAN SOCIETY OF MILITARY COMPTROLLERS, 1959, Washington, D. C.

Requests for permission to reprint articles should be addressed to:

The Editor —

National Editor
Mr. Kenneth E. Dunlap, Navy
Bureau of Aeronautics
Washington 25, D. C.

Second-class postage paid at Washington, D. C. Return postage guaranteed.

Publication address — P.O. Box 1747, Washington 13, D. C.

CONTENTS

	<u>Page</u>
ARMY INDUSTRIAL FUND AT ABERDEEN PROVING GROUNDS	
Colonel Grosvenor F. Powell, Deputy Commander, Aberdeen Proving Ground, Maryland.	1
FINANCING CONTRACT PROCUREMENT (Reprinted from Navy Comptroller Review)	
Mr. N. P. Cassidy, Assistant Comptroller, Accounting and Finance, U. S. Navy.	9
BUDGETING FOR AND MANAGEMENT OF MILITARY PAY AND ALLOWANCES THE MARINE CORPS METHOD	
Mr. M. A. Gillie - Budget Branch - Fiscal Division - Headquarters, Marine Corps	14
KNOW YOUR OFFICERS	
Mr. Oscar C. Lightner, National Secretary, ASMC.	19
COST CONTROL THROUGH ARMY INDUSTRIAL FUNDS	
Mr. Erle Cato.	20
ACCOUNTING OBJECTIVES - RELATION TO BUDGETING - COMPTROLLER GENERAL'S ACCOUNTING PRINCIPLES AND STANDARDS	
Mr. Raymond Einhorn, Associate Director, Accounting & Auditing Policy Staff, General Accounting Office	
Summary by: William Brown, James Duby, Andrew Moran, Anthony Triolo.	24
BUDGET EXECUTION IN AN AGENCY AND SYSTEM OF ADMINISTRATIVE CONTROL OF FUNDS	
Mr. James A. Miller, Deputy Assistant Controller for Budget, Atomic Energy Commission.	28
CANAL ZONE AND MILITARY COMPTROLLERS EXCHANGE IDEAS	
Lt. Col. A. A. Tisone, USAF Hdqtrs., Caribbean Air Command, Albrook Air Force Base, Canal Zone.	32
RUBRIC BUDGET COST RATIOS - A New Navy Industrial Funds Concept	
Mr. L. J. Richards, CPA-Comptrollers Office, U. S. Naval Gun Factory.	33
COST CONTROL IN THE FEDERAL GOVERNMENT	
Submitted by Mr. Marvin B. Hopkins, Chief Cost Analysis Branch, Budget Division, USCG Headquarters.	39



A LETTER FROM THE EDITOR:

Of special interest to ASMC members and his many friends is the retirement, from the government on 30 June 1959, of Col. Ernest L. Osborne, USAR (Hon. Ret.), who announces the establishment of private practice as an advisor on Management of Scientific and Engineering Research and Development Organizations with offices at 3130 Wisconsin Avenue, N. W., Washington 16, D. C.

Col. Osborne received his engineering and scientific education at Yale University (Ph.B.), (elected to Sigma Xi for scientific scholarship), and the Massachusetts Institute of Technology (S.B.); accountancy, business administration and applied economics education at Pace Institute (Washington and New York); and business cycles, money and banking, public finance, economic theory and statistics education at Columbia University, School of Business (Post Graduate); Partner, Certified Public Accounting Firm, Controller, Secretary, Treasurer and Director of Industrial Corporations, Consulting Economist to the Research Council of the Controllers Institute of America, Senior Technical Advisor to various State Agencies, Special Consultant, Organization and Methods Examiner, Management Analyst, with extensive liaison work in the Pentagon (Army, Navy and Air Force). And last but surely not least are the ASMC accomplishments and a United States Army career: Life Member of American Society of Military Comptrollers; Member of National Council; formerly National Secretary and Editor; and President of Washington Chapter; awarded the "Certificate of Outstanding Service to the Profession of Military Comptrollership." Career has included commissioned service in the Corps of Engineers, United States Army; and service as Colonel, Army of the United States. Received Certificate of Achievement from Department of the Army. Biographical sketch in Volume III of "American Men of Science" (1956).

I would surely be remiss if I didn't add a "Well Done, Colonel" and "Continued Success in Your New Venture."

The Editor.

ARMY INDUSTRIAL FUND AT ABERDEEN PROVING GROUNDS

Colonel Grosvenor F. Powell,* Deputy Commander, Aberdeen Proving Ground, Maryland

Since 1953 we have been hearing considerable talk about the Army Financial Management Plan. As most of us know by this time, the Plan was designed to achieve the basis for more effective and more efficient overall financial management of the Army. The Army Financial Management Plan embraces the principle that each Commander be provided with the resources necessary to perform his assigned function or mission, and that he be held strictly accountable for the use of these resources. Inherent in this principle is the requirement for the improvement of operational performance through the assignment of specific responsibility for the evaluation and control of the cost of labor, supplies and services by those who actually cause the expenditure to be made. In order to accomplish this, it is necessary to utilize accounting methods and techniques similar to those used in private industry. At Aberdeen Proving Ground this is being accomplished through the use of the Army Industrial Fund, which as we all know, is an element of the Financial Management Plan. This system was instituted at Aberdeen Proving Ground on 1 September 1957.

Before I discuss the details of the AIF, I would like to tell you about the mission of Aberdeen Proving Ground. APG is a Class II installation, reporting directly to the Chief of Ordnance. Our mission is to perform basic and applied research, development engineering and proof, or acceptance testing of Ordnance materiel. This includes research in the science of ballistics, missiles, and problems relating to space phenomena; human engineering studies; coating and chemical research and Explosive Ordnance Disposal activities. Our proof and acceptance work includes the testing of weapons, vehicles and ammunition. In order to accomplish our mission, our facilities include wind tunnels, blast chambers, firing ranges, test courses, and many other unique and special experimental aids. For research, development, and testing to be conducted under extreme climatic conditions, we maintain test teams and activities at Yuma, Arizona and Fort Churchill, Canada. In addition to our basic mission, we provide administrative and logistical support to separate and attached agencies, such as the Ordnance Training Command, the Nike Guided Missile Shops, and The Ordnance Board. When directed by the Chief of Ordnance, or higher authority, the installation furnishes services and performs work for agencies of other Government departments, and in some cases, for private individuals, industrial concerns and other agencies as authorized by law.

Prior to 1 September 1957, APG operated under the appropriation system which was restricted to the legal and fiscal aspects of the accounting function. This system provided operating funds from some forty different sources. This resulted in numerous different accounting pockets, with some 3,000 fiscal ledger accounts and required the entry of detailed accounting transactions in these accounts. Burdened with this multi-financed, complex "Frankenstein", we did not have control and our organization was not mission oriented. Under conditions such as these, there was an impelling requirement for the establishment of an Industrial Fund System.

The installation of the AIF has resolved many of our problems by providing modern management and accounting techniques for the integration of data, which is essential for effective management action in a mission oriented organization.

Before I go any further, perhaps I'd better answer the question that may be in your mind. What is an Army Industrial Fund and how does it operate?

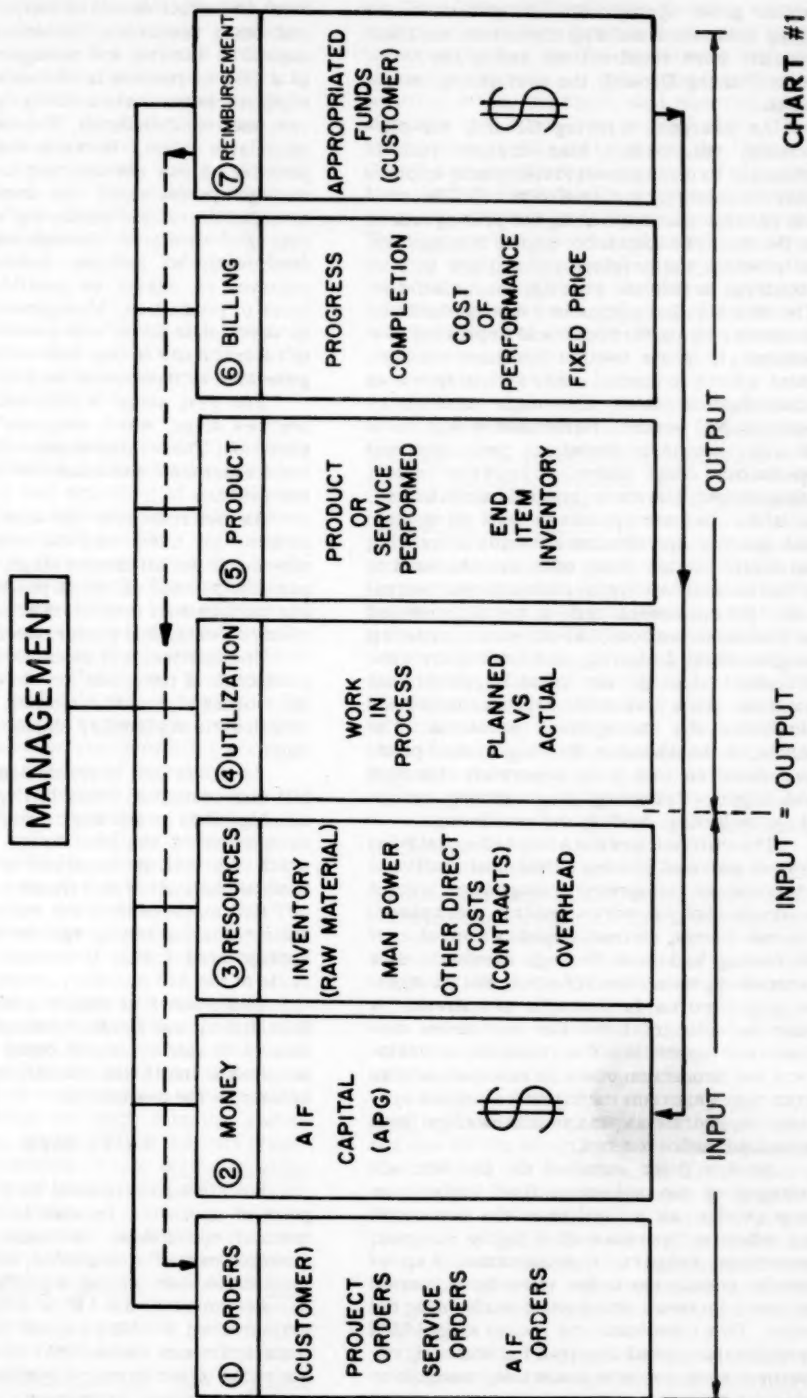
The AIF is a working capital revolving fund authorized by a Charter, with a cash allocation provided from the U. S. Treasury. The initial working capital is made up of this cash, plus the installation's inventories of materials and supplies which are also contributed, less an amount representing the accrued leave on the starting date. All of this represents the "Corpus of the fund".

The revolving nature or management cycle of the fund is illustrated by Chart #1.

The first stage in the cycle is the receipt of the customer's order. By customer, we mean any installation, command, other Government agency, or commercial concern requesting the accomplishment of work by the Proving Ground. The Office Chief of Ordnance is our biggest customer. Work is also received from arsenals such as Picatinny, Frankford, Watertown, Redstone, and other Army installations. Some orders are from the Air Force, Navy and the Advanced Research Project Agency. Before any work can be undertaken, the order in the form of a project order, service order, or AIF order, must be received from the customer. At this point, let us observe that the "buyer-seller" relationship is not completely analogous to such a relationship in private business; some of the elements are missing. Yet, this relationship has real value in those remaining elements of executing work under specific "contract or work order": A method of operation

*Presented by Col. Grosvenor F. Powell, Deputy Commander, Aberdeen Proving Ground to the U. S. Army Management School, Ft. Belvoir, Virginia.

MANAGEMENT CYCLE UNDER THE ARMY INDUSTRIAL FUND



which gives appropriate recognition to the many different benefiting customers and their specific work requirements and to the Aberdeen Proving Ground, the performing installation.

At Aberdeen Proving Ground, the contractual relationship also creates built-in pressure on management to continually improve cost estimating and cost control. The need for reliable cost estimating for pricing orders at the time of acceptance, impels management to promote the development and use of cost standards to indicate what the costs should be. The cost standards become a management tool in measuring performance and improving cost control. It is our opinion that these management efforts to control costs arouse true cost consciousness down thru each supervisory level to the worker. Performance and costs of jobs, services, functions, processes and operations come under objective study. Management efforts to control performance, in order to meet price as well as quality and quantity specifications, result in smoking out inefficiencies which often are obscured in a "level-of-effort" type of management control. Since the customers' orders are accompanied by fund authorizations, like a contract, ordering, programming, budgeting, and funding are synchronized through the same organizational channels. This eliminates reprogramming and simplifies the management problems. The nature of the Aberdeen Proving Ground problem requires that it be separately managed with regard to planning, programming, scheduling, budgeting, funding and accounting.

The utilization of the Army Industrial Fund System permits placing substantial additional emphasis on integrated management control systems, such as: work standards, work planning and control, statistical quality control, cost estimating and cost finding, automatic data processing, operations research, and managerial type reports. In this type of operation, it must be fully realized that we cannot disassociate accounting for research, development and production costs on customer orders from our important management control systems any more than we can disassociate them from fund authorizations.

At this point, some of the peculiar advantages of the industrial fund begin to be very evident as it facilitates the successful and effective operation of a highly complex, non-routine industrial type operation. As previously stated, the order must be supported by funds to cover the cost of performing the order. This constitutes the money stage which provides the capital required for obtaining resources such as raw materials, manpower, other direct costs, and overhead type costs.

Although use of the working capital provides greater financial authority and flexibility to operating management for procure-

ment and effective use of manpower, materials and other resources, the amount of working capital is limited, and management must look to a flow of revenue from customers which is adequate to maintain working capital in a solvent and liquid condition. This need for revenue stimulates alert, forward-looking financial planning. Since revenue may be obtained only through performance on customer orders, management of the producing activity is encouraged to strive, through negotiation with customers, to procure advance orders to achieve, as nearly as possible, an efficient level of production. Management is motivated to vary labor force and inventories in order to control costs in line with workloads actually generated by customers' orders.

The next stage is referred to as the resources stage, which requires no further explanation. These three stages - Orders, Money, and Resources - constitute the input factors in our cycle.

As our resources are applied to accepted orders, we move into the area of work-in-process in the utilization stage. Here we compare the planned vs. actual position and analyze our performance in terms of actual costs vs. our planned costs, and performance vs. schedule.

The utilization of resources results in the production of the goods or services that have been ordered by our customer. The end-item inventory is depleted by shipment to the customer.

As goods and services are delivered, we bill our customer. This billing stage can be accomplished as the work progresses or at the completion of the total order. The price at which the bill is rendered is either on the basis of the cost of performance or fixed price.

Reimbursement to the Industrial Fund results from the billing against the customer's appropriated funds. With this, the revolving cycle of the AIF has been completed.

These last four stages - utilization, product, billing, and reimbursement, are the output factors in our cycle. In order for the AIF to perpetuate itself, the overall operation must balance in the evaluation:

Input = output

With this point in mind, we find the greatest point of distinction between the AIF and commercial operations: - industry continually attempts to maximize profits, whereas, the AIF must break even without a profit or loss.

In summary, the AIF is a revolving, self-perpetuating, working capital fund utilized to initially finance commercial or industrial type activities of the Army. It operates by using its capital or money to procure resources to be utilized in the production of goods and/or services ordered by the customers who must reimburse the fund based on billings rendered.

A major purpose of the industrial fund program is to create for both the producer and consumer of goods and services produced by industrial and commercial-type activities, management incentives to seek greater efficiency and economy in the production and consumption of such goods and services. To do this, financial arrangements are so devised that human nature will work for these objectives, rather than against them. Incentives for better management are created by two factors inherent in the industrial fund system —

(1) the contractual relationship required between consumer and producer, and (2) the dependence of the producer on revenue to replenish his working capital.

The AIF meshes nicely with other basic management tools for the integration of planning, controlling and reporting of our mission objectives and accomplishments. This system is depicted in Charts #2 and #3.

The receipt of a customer order is the initial phase of the system. The order is reviewed to determine if it can be accomplished by the installation, i.e., whether we have the capability, capacity and facilities required to perform the work. If we do, the order is accepted. The order is then assigned to the applicable operating organization which has the specific mission assignment for accomplishing the requirements of the order.

Control is established at this point by the assignment of an expenditure order (X.O.) number which will be utilized from the work planning and scheduling phase, through and including completion of the work, and the final billing which will reimburse the AIF. The X.O. is the local identification by which we plan, control and report under our integrated system.

The operating organization must then plan the details of how the work will be accomplished through every stage, phase, and operation required to complete the work, in accordance with the technical requirements of the customer's order. After the work planning, comes budget planning, which utilizes the work planning data and converts it into dollar requirements in terms of labor, overhead, material, and other direct costs.

The Planning data is furnished to the Comptroller who must assure that the customer has provided adequate funding to cover the cost of performing the work. If sufficient funds are available, authority is granted to the performing organization and work is commenced. No work is undertaken until this authority is granted by the Comptroller. At the same time, the Data Processing Branch (EAM) is notified that authority has been granted, and a master operations and cost card is establish-

ed. This "Master Deck" then becomes a control point to assure that only authorized work is accomplished. As the performing organization incurs costs, it must submit job cards covering labor, overhead, and material consumption to the Data Processing Branch. This information is then collated with the "Master Deck" and unauthorized charges, if any, are investigated. Periodically, reports are rendered to the customer as to the status of his work. The Comptroller provides information relative to fund requirements and status, while the performing organization furnishes technical information relative to progress of the work.

Feed Back of integrated data for management review, decision and action is provided as shown in Chart #3.

Internal reporting and analysis is generated to cover three major areas — General Accounting, Cost Analysis and Accounting, and Work Planning and Control Data. Information developed in the latter area is fed back to the performing organization in the form of daily, weekly, and monthly reports covering the utilization of manpower in terms of manhours. Comparison can then be made at various levels between planned performance and actual performance. Non-production time is identified and corrective action is taken where necessary. Since labor and overhead constitute 85% of APG's costs, the system permits attention to be focused at those points where analysis and review efforts will prove the most fruitful. With this information and the data relative to our load forecast, adjustments can be initiated to assure the most efficient and economical utilization of our resources.

The next major area of feed back — Cost Analysis and Accounting is accomplished by the Comptroller and the performing organization. Weekly and monthly reports permit the detailed analysis of all elements of cost at all levels of interest. The emphasis in this area is that of controlling and reporting dollars of cost rather than just hours. A detailed example will be presented in a few moments which will fully explain the area of cost control.

The feed back of data in the General Accounting area is designed primarily to maintain and control the integrity of our working capital fund, the AIF. In this area, the Comptroller is responsible for the management review, decision and action to assure that all expenses incurred in the performance of an order are billed to and reimbursed by the customer. Control, reporting, and analysis are effected for each element of cost on a weekly or monthly basis.

This whole integrated system is predicated on the theory that management must have timely and accurate data which can be reviewed at various levels to permit decision as to what course of action should be taken. Good information fosters good decision.

INTEGRATED PLANNING, CONTROL AND REPORTING SYSTEM

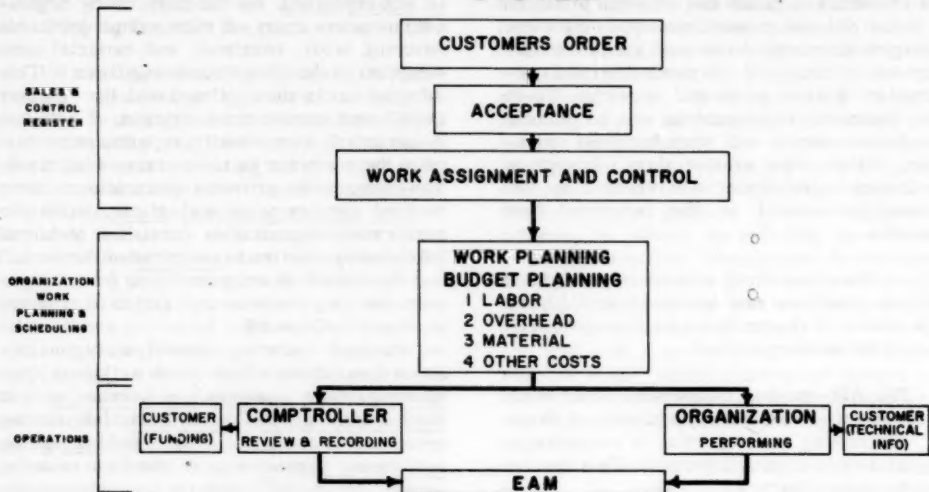


CHART #2

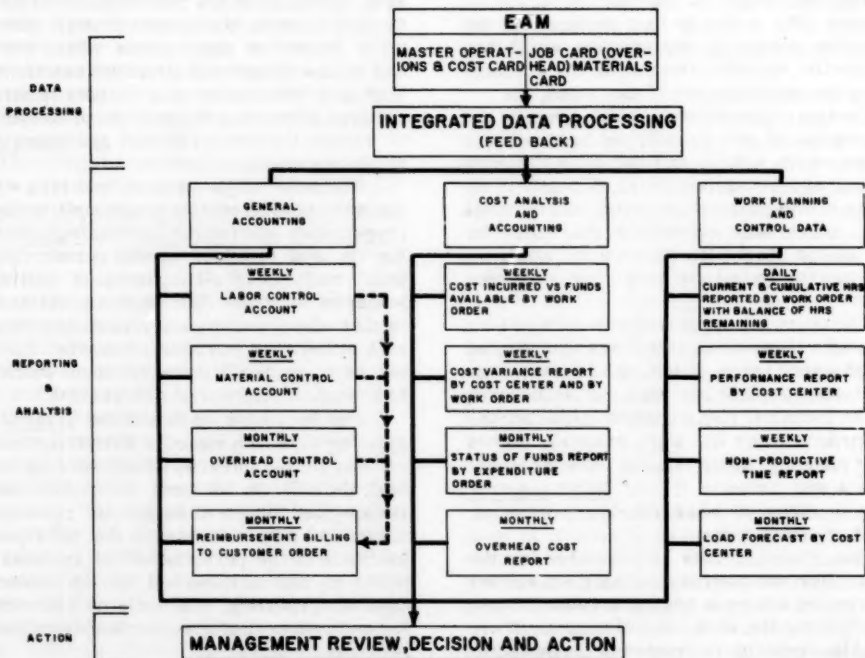


CHART #3

The primary purpose of the entire integrated system is to provide the framework that will permit management to get the work out on schedule and to control costs. We plan and schedule our work budget for the dollars required to perform, and then we analyze our planned vs. actual performance. Chart #4 illustrates the Control of Costs by Work Order.

As you can see, this is done by direct elements of costs, i.e., labor, material, and other direct costs. In addition, labor is analyzed not only in terms of dollars, but also in terms of hours. The analysis of labor hours has become more meaningful since 1 July 1958 when we adopted average labor hourly rates for each cost center performing work on customer orders.

The planned performance for each work order is budgeted in terms of hours and dollars by each direct element of cost as indicated on the right side of Chart #4. As expenses are incurred, a comparison of actual performance against the budget for the work is possible and the resulting variances can be computed and analyzed. This permits the computation of percentages of planned effectiveness for each element of direct cost. In addition to comparisons at the individual expense stage, comparisons are also possible at the work-in-process and the finished product stages, with particular attention being given to the total cost variance and the resultant percentage of effectiveness at the total Work Order level.

As you no doubt have noticed, no analysis is made of the indirect costs at the work order level. All indirect expenses are analyzed at the Cost Center level as is customary in commercial accounting practices.

By focusing on our unusual variances, we are able to concentrate our attention in those areas that need the most attention. In this way, we are able to apply the principle of management by exception.

Another big aid in facilitating the practice of the concept of management by exception is the Funds Status Report. The format of this report is shown in Chart #5.

The Funds Status Report provides general management with one of its most vital overall business management tools. In this report the emphasis is placed on our two most important elements of cost - labor and overhead, which represents about 85% of our cost. However, consideration is given to all other elements of cost since estimates of these requirements are reflected when the expenditure order is established.

In the illustration, there are three expenditure orders, all relating to the Combat Vehicle Program. The balance remaining after the material and other estimated requirements have been subtracted from the funds authorized represents the amount of funds that are available for labor and overhead costs, as shown in

Column #5. The amount expended for labor and overhead during the period is indicated in the 6th Column and the balance remaining for labor and overhead is obtained by subtraction, and shown in the 9th Column. Based on the planned hours remaining, the funds needed for the remaining labor and overhead requirements is ascertained, and shown in the 10th Column. Comparison of the balance that is available for labor and overhead with the amount required indicates whether there is an overage or shortage of funds for the completion of the planned hours remaining. This is shown in the last column. In addition, the actual hours expended during the week is shown so that some indication of hours being utilized is presented as an aid in determining how the work is progressing. From this information, we can determine approximately how many weeks it will take for completion of the work.

This type of report is extremely helpful in reprogramming of funds into expenditure orders where additional funds are required, since we are permitted to reprogram within the same major program. In the case at hand, we have a shortage of funds on X.O. 395-901, the first one. Funds can be reprogrammed from X.O. 395-902, which indicates an overage, since both X.O.'s relate to the Combat Vehicle Program. Program-wise we will still have a balance of some \$5,000 as shown on the next to the last line.

Another advantage of this report is that it permits us to return excess funds to the customer before the work is completed. This aids the customer in getting better utilization of funds since he knows before the work is completed that he has funds that are available for other work, either at the Proving Ground or elsewhere.

In summary, the Status of Funds Report permits us to adjust our plans as a result of changing conditions and factors, permits us to assure administrative control of funds, and permits us to report overages (or shortages) to the customer on a timely basis so that he can adjust his plans to varying condition.

Now, I would like to summarize the Benefits of AIF as we can see them at Aberdeen. First, the AIF is Mission Oriented. It tends to promote more complete and systematic consolidation of functions within one homogeneous organization and reduces the diffusion of financial and administrative responsibility existing in a multi-financed operation. The AIF has introduced greater flexibility in the assignment and performance of work and has enabled us to assign functions in a manner best suited to mission requirements. It places control directly in the hands of the Commander, who is thus afforded greater management flexibility in utilizing available resources to meet his mission objectives.

The next major benefit of AIF is the fact

CONTROL OF COSTS

BY WORK ORDER

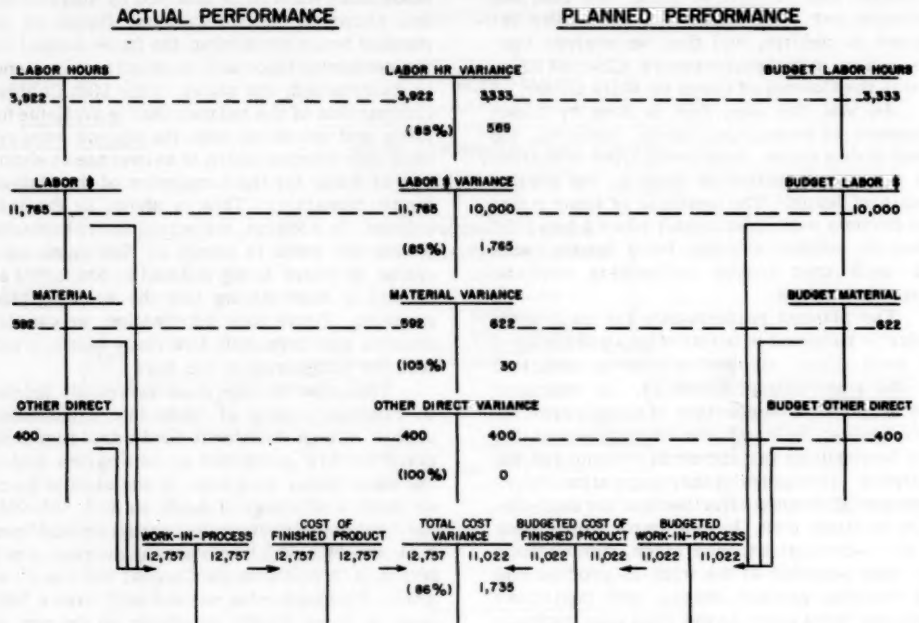


CHART #4

FUNDS STATUS REPORT AS OF 16 NOV 1958

Ex Order	Description	Funds Authorized \$	Material and Other Est Req \$	Labor and O/H Funds Auth \$	Labor and O/H Expended \$	Actual Hrs expended During Wk Hrs	Planned Hours Remaining Hrs	Balance For Labor and O/H \$	Funds re-quired for Labor, O/H \$	Over Short(C) \$
395-901	Combat Vehicle Program									
395-901	Truck, Util 3/4 XM408	22,500	3,375	19,125	12,398	38	1,062	6,727	9,561	2,834C
395-902	Truck Amph 2 1/2 XM147	192,750	28,950	163,800	122,850	208	3,640	40,950	32,760	8,190
395-903	Transporter, Combat Veh	34,750	5,200	29,550	22,162	68	821	7,388	7,388	-0-
	Total for Combat Vehicle Program	250,000	37,525	212,475	157,410	314	5,523	55,065	49,709	5,356
	Last Wk's total	250,000	37,525	212,475	154,680	303	5,826	57,795	52,590	5,205

CHART #5

that it forces management at all levels to become performance conscious. The AIF provides for broad fund and performance controls at the Commander's level and for detailed controls at the organization and work order level. It provides current and accurate reports which are completely integrated to disclose facts regarding actual costs versus planned costs, actual time of performance versus scheduled performance, direct costs versus indirect costs, and resources actually utilized versus planned utilization. The AIF provides a real incentive to develop and utilize realistic planning, since the AIF system expects close scrutiny of actual performance against the plan.

Third, since the AIF is a system which can be more readily integrated with other management control systems and can be more readily mechanized on modern data processing equipment, it provides a basis for improved "scientific management." Through the AIF, programming, planning, budgeting, accounting, inventory, manpower control, performance analysis and billing are all integrated to produce many reports for various levels of responsibility.

There are, of course, certain limitations under the present AIF concept. Perhaps, the greatest of these being the fact that a national procurement activity is not permitted to be financed under the Industrial Fund. At installations where this type of activity represents a significant portion of the total mission, the AIF financial statements do not reflect the overall total management picture. In addition,

we still must rely on appropriated funds to obtain Capital Equipment required by the installation. All non-operating facilities requirements at AIF installations must be budgeted and funded separately and cannot be included in the AIF system. In theory, this is proper; but in practice, this limitation dictates separate and independent management action outside of the AIF framework. The AIF provides for the treatment of depreciation of assets as only a statistical cost and does not permit prorata charges against customer orders and the offsetting establishment of reserve accounts for the replacement of fixed assets. A Department of Defense directive indicates that costs of minor amounts of capital equipment may be charged to AIF overhead provided the Department of Army issues instructions. As of now, these instructions have not been issued, but efforts are being made to remedy this situation.

In addition, Office, Chief of Ordnance still controls the allocation of Class Act manpower spaces at APG. Recently, APG was granted authority to control its own Wage Board manpower spaces which permits us to adjust, to some extent, our labor force to meet changes in levels of direct operations.

In conclusion, the AIF at Aberdeen Proving Ground represents a realistic and constructive approach to the Ordnance Corps' objective of reducing costs, keeping our affairs in order, improving quality performance and meeting customer schedules. The Army Industrial Fund is a system for developing facts (in terms of dollars) so that a manager can check performance and make good decisions to reduce costs.

AIF BENEFITS

MISSION ORIENTED

PERFORMANCE CONSCIOUS

SCIENTIFICALLY MANAGED

FINANCING CONTRACT PROCUREMENT

Mr. N. P. Cassidy, Assistant Comptroller, Accounting and Finance, U. S. Navy

Reprinted from Navy Comptroller Review

Bibliographical Sketch: Norwood P. Cassidy, Assistant Comptroller of the Navy, Finance and Accounting, is responsible for directing and prescribing world-wide systems of accounting and reporting, and supervising the execution of principles, policies, and procedures to be followed within the Department of the Navy. Prior to his appointment as Assistant Comptroller, he served as Fiscal Director of the Navy Department from 1947 to 1950. From 1919 to 1947, Mr. Cassidy held the positions of clerk, administrative assistant, chief accountant and auditor, and executive accountant and auditor in the Bureau of Supplies and Accounts. Since 1934 to date Mr. Cassidy has been associated with the direction of accounting operations throughout the Naval Establishment. He was financial director of commercial operations in many private plants seized by the Navy during World War II pursuant to Executive Order. He served in the Army during World War I. Among his commendations is the Distinguished Civilian Service Award received from Secretary Forrestal in October 1945. Mr. Cassidy holds a law degree from National University, is a member of the District of Columbia and Virginia Bars, and in various years, has served as Professor of Business Administration, teaching accounting and budgeting procedures at Columbus University. He is a member of the Sigma Nu Phi Fraternity, Federal Government Accountants Association, and the American Society of Military Comptrollers. A prominent figure in procurement financing, Mr. Cassidy commands high respect in industrial banking and financial circles as well as throughout the Government.

Contract financing in the Department of the Navy is carried on pursuant to statutes, Department of Defense policy, and joint procedures prescribed by the three military departments, after these procedures are co-ordinated with the Contract Finance Committee. This Committee is composed of procurement representatives and comptroller (finance) representatives of the three military departments and of the Office of the Secretary of Defense.

Contract financing is available to contractors in three different forms: guaranteed loans, advance payments, and progress payments.

Guaranteed loans are made under the authority of Section 301(a) of the Defense Production Act of 1950, as amended, and Executive Order No. 10480. The Departments of the Army, Navy, and Air Force, among others, are designated as "guaranteeing agencies" and authorized by Section 302(a) of Executive Order 10480. They may, pursuant to this authority guarantee in whole, or in part, any public or private financing institution (including any Federal Reserve bank) by commitment to purchase, agreement to share losses, or otherwise, against loss of principal or interest on any loan which may be made for the purpose of financing any contractor, subcontractor, or other person in connection with performance of any contract or other operation deemed by the guaranteeing agency to be necessary to expedite production and deliveries or services under Government contracts for the national defense, or in contemplation of the termination, in the interest of the United States, of any contract made for the national defense.

Under the guaranteed loan program, a loan (commonly referred to as a "V-loan"

because such loans are made under Regulation V of the Board of Governors of the Federal Reserve System) is essentially the same as any other loan made by banks, except that under the standard form of V-loan guarantee agreement the guaranteeing agency is obligated on demand of the lender to purchase a stated percentage of the loan and share losses in the ratio of that guaranteed percentage. Guaranteed loans afford a particularly good medium for financing borrowers who hold subcontracts, or numerous prime contracts and prime contracts with several contracting agencies. Funds are disbursed and collected by the lending institution, and its personnel administer the loan. Government funds are not involved except by purchase of the guaranteed portion of loans and the settlement of losses.

The second type of financing employed for contract procurement is advance payments. Advance payments are authorized in accordance with the provisions of 10 U. S. Code 2307. When appropriate, advance payments also are authorized pursuant to The Act of August 28, 1958 (72 Stat. 972). In addition to this general authority, advance payments by the Navy on salvage operations contracts are authorized by 10 U. S. Code 7364.

Advance payments are advances of money made by the Government to a contractor prior to, in anticipation of, and for the purpose of complete performance under a contract or contracts. Advance payments are made only to prime contractors. They are expected to be liquidated from payments due to the contractor incident to the performance of contracts. While advance payments may be made to prime contractors for the purpose of making

advances to subcontractors, the work involved on the part of prime contractors and the risks involved for prime contractors severely limit the practical usefulness of subadvances for financing subcontract performance.

The third type of financing used for procurement contracts is progress payments. The authority to make progress payments may be found in the provisions of Section 3648, Revised Statutes, 31 U. S. Code 529. The term "progress payment" signifies payments made, as work progresses under a contract, upon the basis of costs incurred, of percentage of completion accomplished, or of a particular stage of completion. This type of funding provides, by far, the most preponderant dollar support to the procurement effort.

These are the three categories of financing available and regularly employed to assist contractors in the performance of defense contracts. The question immediately raised by this recital is, "What are the basic policies applicable to each?"

Department of Defense policy — speaking of all three types — is that contract financing is to be regarded as a useful working tool that may be used to the benefit of the Government for aiding procurement by expediting performance of defense contracts and subcontracts. The contract financing system makes possible production in volume that could not be accomplished otherwise. Prudent contract financing supports procurement and production and fosters the small business policy by providing necessary funds to supplement other funds available to contractors for contract performance. The cardinal rule is that contract financing is to be provided only to the extent reasonably required for performance of contracts and subcontracts.

This general policy is predicated on the knowledge: (1) that money is one of the indispensable elements for all contract performance; and (2) that financial difficulties encountered by contractors and subcontractors may disrupt production schedules, cause wastage of manpower and material, and result in monetary loss to the Government on the default and reletting of contracts.

In pursuance of this general policy, and in order to reduce the hazards as far as possible, procurement authorities are enjoined that contracts should be entered into only with those potential contractors who have the financial capacity or credit (giving due regard to the availability of progress payments, guaranteed loans, and advance payments), the technical skill, management competence, and plant capacity and facilities (including subcontracting capacity) to reasonably assure their ability to perform defense contracts in accordance with their terms.

In further amplification of this point, Department of Defense policy is that the need

for advance payments, or for progress payments, or for a guaranteed loan shall not be treated as a handicap in awarding contracts to those qualified contractors who are otherwise deemed competent and capable of satisfactory performance. Further, it provides that any contractor deemed reliable, competent, capable and otherwise responsible, must not be regarded as any less responsible by reason of the need for reasonable contract financing provided directly or guaranteed by a military department.

In the selection of an appropriate method for provision of funds to finance defense contracts, contractors are not expected to seek or obtain loans or credit from agencies of the Government outside the Department of Defense. The purpose of this is to insure that every reasonable effort is made to assist small business in the problems relating to financing defense contracts.

Provision for progress payments or advance payments may be incorporated into contracts at inception, or provided later by amendment. V - loans may be established contemporaneously with contract award; or arranged later; or, if so provided by loan agreement, an existing V - loan may be utilized for financing a contract entered into after the establishment of the V - loan.

In what manner is this financial assistance extended to contractors? There follows briefly the procedure applicable to progress payments, guaranteed loans, and advance payments.

As to progress payments, the Department of Defense policy provides that when requested by contractors who are known from experience or from adequate preaward investigation to be reliable, competent, and capable of satisfactory performance, to have an adequate accounting system and controls, and to be in a satisfactory financial condition, "customary" progress payments may be made on negotiated contracts provided that such contracts involve a long "lead time" or preparatory period (normally approximately six months or more between the beginning of work and the first delivery) and may require predelivery expenditures that will have a material impact on contractor's working funds. Familiar examples include, among others, contracts for aircraft, engines, complex items of electrical or electronic equipment, heavy handling equipment, production machines and equipment, tanks, and other items of heavy ordnance.

Whenever, incident to formal advertising the contracting officer considers that the period between the beginning of work and the required first production delivery will exceed six months, or that progress payments will be useful or necessary by reason of unusual circumstances that will involve subsequent accumulation of predelivery costs that may have a material impact on a contractor's working

funds, the invitation for bids will state that upon written request by the prospective contractor the standard progress payment clause will be included in the contract at the time of the award. The invitation for bids also states that bids which include such request will be evaluated on an equal basis with those not including such requests. In passing, it should be noted that the Comptroller General has held that if the invitation for bids does not contain the statement relative to availability of progress payments, such bids are deemed non-responsive to the invitation. Progress payments may be provided subsequent to the award of a contract but only if the Government receives good and sufficient legal consideration.

The amount of progress payments is limited to a percentage of costs incurred, or a percentage on stage of completion. Under Department of Defense regulations, all supply contract progress payments are to be based on costs incurred. The exceptions are contracts for military public works construction, shipbuilding, and ship overhaul and repair. For construction and ships, percentage of completion progress payments are traditional. Progress payments on supply contracts are customarily measured at 70% of costs incurred, except that in the case of small business they may be made at 75%. However, "unusual" progress payments may be made at a higher rate, if cleared by the Department of Defense Contract Finance Committee. Not more than 6 or 7 cases have been passed up to the Committee since the "customary" level on such payments was officially prescribed in April 1954.

Progress payment financing involves direct financing by the Government on the basis of work in process and inventories acquired under a specific contract. As of 1 January 1959, the aggregate sum of \$1,487,778,548 was outstanding in progress payments on all Navy contracts, exclusive of military construction contracts.

Turning next to guaranteed loans, the procedure followed in V-loans differs from progress payments in that the procurement officer does not provide the financing as a part of the contract. At the time of contract award, he is expected to satisfy himself that the contractor has, or will have, sufficient funds reasonably to assure the satisfactory performance of the contract. An existing V-loan in force at the time of contract award, or one contemporaneously or subsequently arranged, may provide this assistance.

Usually, a defense contractor or subcontractor goes to a bank or banks of his own choosing and discusses his need for working capital to finance his defense work. The bank determines whether to make the loan; if so, whether wholly at the bank's risk or with a limited Government guarantee. If the bank

considers a guarantee necessary, it will then work out an agreement as to the terms and conditions of the loan. When this is done, the bank will submit an application for the guarantee to the Federal Reserve bank in its district. The application is forwarded to the agency or military department having preponderance of interest in the proposed borrower's backlog. Accompanying the application will be a listing of all defense contracts, both primes and subs, a copy of the proposed loan agreement, cash forecasts of the borrower and information on the history and financial condition of the borrower. Upon receipt of the application for the Government guarantee, the Federal Reserve bank first makes an analysis of the financial condition of the contractor and his requirements, and then prepares a credit report for the potential guarantor, including recommendations concerning the loan.

Upon receipt of the report by the guaranteeing agency, the Comptroller's Office requests the procurement authorities to provide certification (a "Certificate of Eligibility") in writing as to: (1) the need of the production under the defense contracts in question as it relates to the national defense effort; (2) whether or not the contractor is known to have the required facilities and ability to perform the contracts; and (3) whether or not there is a readily available alternate source. The alternate source determination is not sought, however, with regard to small business; in fact, its applicability to small business is barred under existing legislation.

With regard to the alternate source requirement, the Certificate of Eligibility states:

"This is not intended as a statement that there is absolutely no alternative source other than this contractor. The certification is founded on practical considerations. These considerations include the urgency of supply schedules, technical and plant capacity and unwillingness of other suppliers, time and expense involved in reletting all or parts of contracts (including expense of terminations for convenience and delays incident to future determinations of default), comparative prices, effecting interruptions of established subcontracting arrangements, and other pertinent practical factors." If the certification is denied the application for a guarantee is disapproved. However, affirmative certificates of eligibility are usually received together with supporting information from contracting officers.

With the Certificate of Eligibility in hand, the Comptroller's Office makes an analysis and evaluation of the financial condition of the contractor, the proposed terms and conditions of the loan, and the recommendations of the Federal Reserve bank. Ordinarily, mortgages on fixed assets are not required, but they are required when considered essential to protect the Government. Depending upon the circum-

stances of individual cases, endorsements, guarantees, subordinations, and stand-bys of other indebtedness, and other special security devices are required when deemed necessary for the protection of the Government. The loan agreements also contain certain affirmative and negative covenants which likewise are designed to afford protection of the Government's interest.

At this point it will be observed that the case will have been screened and evaluated by the commercial bank, the Reserve bank, and the guaranteeing agency. In the analysis and evaluation, it is kept in mind that these arrangements should not be arbitrarily, burdensomely, or unreasonably restrictive, but that they should provide all safeguards and limitations that are prudently and reasonably necessary to protect the Government.

After this analysis and evaluation, unless the risks are judged to be so great as to make a guarantee imprudent, authority is transmitted back to the Federal Reserve bank to enter into a guarantee agreement with the bank which is to advance the money—their money, not the Government's—to the contractor. However, the Government may condition its guarantee upon changes in the terms and conditions of the loan deemed necessary or desirable. Once the guarantee is issued, the contractor is in a position to make borrowings subject to a borrowing formula and in compliance with the loan agreement.

In the case of all V-loans, the contractor is limited in his borrowing by a borrowing formula sometimes referred to as an "asset formula." This simply means he must have accounts receivable, inventories, and work in process in a predetermined percentage under his defense contracts and subcontracts in excess of actual borrowings. Normally, a contractor is restricted in his borrowings to 80% or 90% of his accounts receivable, inventories, and work in process under defense contracts. In almost all cases, assignment to the lending bank of proceeds of defense contracts is required as collateral to the V-loan. These assignments, together with the foregoing limitation on borrowings would, were all defense contracts and subcontracts profitable, insure an ultimate payoff of the loan out of payments received on contracts. However, experience has shown that some contracts are not profitable. These consequently give rise to financial problems. These unprofitable contracts may be unprofitable for multiple reasons, such as management incompetence, technical deficiencies or unexpected difficulties in meeting specifications, bad pricing in the first instance, failure of suppliers to perform on schedule, etc.

Maturity dates of V-loans are fixed, based on the expected period of contract performance, but normally do not exceed one year or at the

most two years. During the period of the credit, borrowings occur as required (within the loan ceiling and formula) and the loan revolves. However, it should be understood that these maturities do not necessarily bring about a payoff of all loans at maturity because under some loans the contractor is obtaining new contracts and adding more contracts to his borrowing base, which in fact will extend the period of his need for credit, and in some cases will increase the requirement for credit. As maturities occur, the Federal Reserve banks again make recommendations for or against extension, and the guaranteeing agencies carefully review and evaluate the loan, the general condition of the contractor at that time, and the progress being made on defense work. The Comptroller's Office decides whether to extend the maturity and under what terms. These are communicated back to the Federal Reserve bank for official confirmation to the lending banks. If at V-loan maturity, a borrower's backlog of defense contracts, performance record, financial condition, and borrowing requirements are such that a new V-loan would be in order, there is no reasonable ground for insisting (quite contrary to sound industrial and commercial banking practices) that the old loan be first repaid in full and then replaced by a substitute loan. If a contractor or subcontractor (having a V-loan) would have been fully qualified for a V-loan on January 1st, the existence of a maturing V-loan on the preceding December 31st would not disqualify him.

Government funds are not involved in the ordinary V-loan case. Government funds become involved only when lending banks ask the guaranteeing agency to purchase the guaranteed percentage of a loan, which a lending bank has the right to do at any time on ten days' notice, or when losses, if any, are settled, or when the Government voluntarily purchases the loan to establish its statutory priority in the event of possible insolvency proceedings by or against the borrower. It should also be noted that the V-loan program has been more than self-supporting from guarantee fees. The Government, for its guarantee of the stated percentage of the loan, receives a portion of the interest on the loan. The higher the percentage of guarantee, the greater the fee percentage. For instance, in the case of a 70% guarantee, the fee is 10% of the guarantee percentage; on a 90% guarantee it is 30%. Thus, assuming interest at 5% (incidentally, 6% is the maximum which is permissible—and the maximum is prescribed by the Board of Governor's of the Federal Reserve System) the guarantor's share would be $10\% \times 70\% \times 5\%$, or .35% and the bank's share 4.65% with a 70% guarantee; comparable figures at 90% guarantee would be $90\% \times 30\% \times 5\%$, or 1.35% to the guarantor and 3.65% to the bank.

Now, as to the third method of financing, advance payment procedures differ from progress payments and guaranteed loans in that the Navy has direct control over the use and application of the funds advanced by the Government. These advances may be made on any type of contract with a showing of need for direct Government assistance, upon application by the contractor to the contracting officer, if properly authorized by the Comptroller's Office. The contracting officer reviews the application and forwards the papers to the Contract Financing Office (the Comptroller's Office) with a recommendation for or against the advance. If his recommendation is favorable, it is supported by a certificate stating that the required materials are essential to the national defense and that the materials or services cannot be procured readily from an alternate source without prejudice to the national defense without provision for advance payments.

When an advance payment is approved, the advance payment funds and all other payments under the affected contracts are deposited in a special bank account subject to withdrawal only for the purpose of performing the contract. This is assured through the requirement that checks for withdrawal of funds from the special account are required to be signed jointly by the contractor and the Government. Usually, the countersignator for the Government is the naval material inspector who has inspection cognizance over performance of the contract. The terms of the advance payment arrangement provide for a lien in favor of the Government, paramount to all other liens, upon the credit balance in the special bank account and upon the supplies or other things covered by the contract and on all material and other property acquired for or allocated to the performance of the contract or contracts. Restrictive covenants, designed to protect and safeguard the Government's interest, such as prohibitions against mortgaging or encumbering the assets or property of the contractor, against the payment of dividends, etc., are included in the terms of the arrangement. Because of the variations in circumstances of individual cases, a fixed rule

cannot be prescribed for determining adequacy of security in a particular case. When and to the extent deemed necessary and appropriate, special security provisions are required, such as, for example, personal or corporate endorsements or guarantees, pledges of collateral, subordination or stand-by of other indebtedness, and controls or limitation on profit distributions, salaries, bonuses or commissions, rentals and royalties, capital expenditures, creation of liens, debt retirement or stock retirement, and creation of additional obligations. The contractor is obliged to pay interest at the specified rate on the amount of his unliquidated advances. Repayment of advances normally is accomplished by withholding of the final payments under the contract or contracts financed by the advance payment arrangement.

Why are these types of financing necessary? Defense financing is necessary because we have in the economy of this country segments of industry, both large and small, which are dependent for existence, wholly or partly upon Government orders. For the most part, these segments of industry, both large and small, are underfinanced in relation to working capital required to perform contracts for defense purposes. It is just as simple as that. Consequently, in order to obtain the materials and services needed to sustain the defense effort, the Government is obliged to finance the productive effort in whole or in part, much earlier than on delivery or full performance of a contract. Furthermore, because of specialized requirements and limited competition in many fields, or efficiency which permits competitively low prices, many contractors are awarded new contracts which enlarge their cash requirements and extend the period of employment by them of the Government financing assistance made available to them. With the present level of defense spending, the types of specialized equipment materials, and services required, and with the various segments of industry, both large and small, engaged in the defense effort, it is believed that the need for a financing program is a continuing one. Without it, the defense needs would not be met.

STOP THE PRESS!!

The Third National Convention of the American Society of Military Comptrollers will be held Thursday, 22 October 1959, in Room 5A-1070 in the Pentagon, Washington, D. C.

For hotel reservations call or write: —

Rear Admiral G. F. Beardsley
Deputy Comptroller - U. S. N.
Room 4E-774 Pentagon
Washington 25, D. C.

Telephone OX 7-3067

BUDGETING FOR AND MANAGEMENT OF MILITARY PAY AND ALLOWANCES THE MARINE CORPS METHOD

M. A. Gillie - Budget Branch - Fiscal Division - Headquarters, Marine Corps

The military pay and allowance appropriations for active duty personnel within the Department of Defense approximates 10 to 11 billion dollars, annually, or in the neighborhood of 25% to 30% of the total Defense budget. This article will limit itself to a discussion of the Marine Corps appropriation Military Personnel, Marine Corps which, in order of magnitude is currently just around the 600 million dollar mark. However, in that the four services' appropriations are similar in scope and structure, a look at the smallest of the four will disclose problems applicable to all.

The intricacies of the military personnel appropriation Military Personnel, Marine Corps is of primary interest only at the Headquarters level in that: (a) estimates of budgetary requirements are prepared entirely at Headquarters, U. S. Marine Corps (Field Commanders are not requested to supply estimates of their requirements for military pay and allowances as in the case of a maintenance and operation type of appropriation); (b) the field participates directly in managing only in the area of subsistence in messes at major commands or in about 5% of the total appropriation (more than 90% of the appropriation is managed as an open allotment).

PERSONNEL APPROPRIATIONS ARE AMENABLE TO CENTRALIZATION

The advantages of open allotment funding are obvious; Commanding Officers are not allotted limited dollar amounts with which to "buy" Military Personnel; A Commanding Officer may order personnel actions without regard to any fiscal limitations, aside from his inherent responsibility as a government administrator to continually operate economically. The Disbursing Officer's primary interest is in liquidating legal obligations which are authorized by current law or regulation, with complete freedom from fear of being cited for possible violation of the Anti-deficiency Act. The military personnel obligations are based upon regulations, orders, and policies emanating from Headquarters, U. S. Marine Corps.

The formulation and execution of the military pay budget is accomplished with a minimum of sound and fury - except at the Headquarters level, at least insofar as the Marine Corps is concerned. How does this come about?

THE STRUCTURE - TRIED AND TRUE

At the time of realignment of the budget structure around 1952, it was considered that

the then current method of budgeting for military personnel was best; that this type of an appropriation should continue to be budgeted for and financially managed as a whole rather than in separate segments such as divisions, air wings, regiments, battalion or squads.

Using the smaller infantry unit as an example, a squad, it was recognized that costs could vary greatly depending upon the status of individuals that compose the group. A squad composed primarily of voluntarily enlisted personnel, just out of recruit camp, would differ in pay status from one composed of personnel who have almost completed their enlistment or who in a period of mobilization were drafted regardless of having dependents. The basic pay cost for the former would amount to about \$16,000 annually. However, if each individual possessed dependents the costs would increase an additional \$15,000, under the provisions of current law. In addition, if during that year any of the personnel were discharged, there would be large one-time costs payable upon separation, plus, if the man reenlisted, a substantial bonus.

Recognizing, then, that even though military pay and allowances within all the four services are based on identical laws, nevertheless, the specific amounts creditable to the individual member vary greatly depending upon his personal status of duty assignment, it was decided that: the complications of planning and budgeting for military personnel costs would be an unwarranted demand upon field command; the rigidities of executing a financial plan for personnel costs could become self defeating in an organization whose primary existence is for combat; and that, accordingly, formulation and execution of a personnel budget in terms of subordinate units was not only impracticable but undesirable.

As an important aside, however, it must be stated that standard average rates of military pay and allowances have been developed. These are sometimes used for cost comparisons, but their use is limited generally to areas where such statistical costs are satisfactory.

THE TOTAL APPROPRIATION - WHOSE RESPONSIBILITY

The Marine Corps military personnel budget structure is that prescribed by Department of Defense for all four services and is composed of four major budget activities.

MARINE CORPS DESIGNATION OF RESPONSIBILITY

<u>Budget Activity</u>	<u>1959 Allocated Amount in Millions</u>	<u>Project Sponsor</u>	<u>Receives Allocation of funds</u>
Pay and Allowances	541.2	Assistant Chief/ Staff, G-1 w/Fiscal Director	Fiscal Director
Subsistence in Kind	53.3	Quartermaster General w/G-1, G-4	Quartermaster General
Movements, Permanent Change of Station	39.4	Director of Personnel	Director of Personnel
Other Military Personnel Costs	.9	Assistant Chief/ Staff, G-1	Fiscal Director

The overall appropriation sponsor is the Assistant Chief of Staff, G-1. This policy has been determined based on the following reasoning; the Assistant Chief of Staff, G-1 (hereinafter designated ACofS, G-1) is the paramount personnel planning agency of Marine Corps Headquarters; as such he originates the overall officer and enlisted personnel policies and plans; the Personnel Allocation Plan (which outlines personnel requirements for operating forces (Fleet Marine Force, Security Forces, Afloat) Supporting Forces and Training Base; estimates of personnel gains and losses by months.

BUDGETING BY PROGRAM

Let's digress for a moment from the military personnel pay appropriation to get a glimpse of the overall budget picture. The Marine Corps is currently well on the way toward adoption of a system of budgeting tied to programs. The Marine Corps program system would categorize the administrative activities into major functional areas of program development and administration. The program system provides for program formulation, execution, review, and analysis. Program formulation will encompass long-range programs, mid-range programs and annual programs. In program execution, tasks will be assigned to Sub-Program Administrators to ensure the efficient accomplishment of the program objectives.

Under direction of the Commandant of the Marine Corps, the Chief of Staff supervises the operation and administration of all activities of Headquarters, U. S. Marine Corps. With the assistance of the Deputy Chief of Staff (Plans) and the Deputy Chief of Staff (Research and Development), he directs the staff in the development, execution, review, and analysis of Marine programs.

Within this framework, the tentative eight major programs and the staff officers generally responsible will be as follows:

PROGRAM COORDINATOR

Troop and Organization	ACofS, G-3
Operational Research and Development	ACofS, G-3
Materiel Research and Development	ACofS, G-4
Manpower	ACofS, G-1
Materiel	ACofS, G-4
Training	ACofS, G-3
Installations	ACofS, G-4
Aviation	DirAvn

The foregoing alignment assigns the overall manpower program to the ACofS, G-1 thus continuing his specific responsibility for military personnel and the appropriation "Military Personnel, Marine Corps." As Manpower Coordinator, the ACofS, G-1 will also be responsible for two additional major manpower programs - (1) civilian personnel; (2) reserve personnel. However, Sub-Program Administrators will be assigned to assist the G-1 in the latter programs.

To return to our consideration of the military pay appropriation the overall basic plan as prepared by ACofS, G-1 is distributed to the Commandant's staff. At the same time the ACofS, G-1 requests execution of his Standard Operating Procedure (SOP) for formulation of the personnel budget. This consists, in part, of a series of budget questions developed by the Fiscal Director. The answers to these questions in most cases contain personnel details for costing the numerous items of pay and allowances which are dependent upon factors such as the individual's location, or duty, or assignment, or personal status. For those budget questions for which reply is generated within ACofS, G-1, that office calls on the Commandant's Staff for basic personnel data to use as a base or take-off point for budget projections, i.e., number by pay grade, length of service. To these data are applied experience factors (percent of reenlistment, for example.) The ACofS, G-1 then forwards, as a complete package, the SOP

data to the Fiscal Director who prices the budget plan under consideration.

Before acceptance, however, and incorporated into the budget request, the individual item of pay or allowance, is compared with history of past performance as to number, average rate, and validity when compared to items of similar nature. The ACofS, G-1 is contacted for explanation or, if required, modification. In addition, the cost is evaluated from a financial feasibility standpoint, i.e., evaluated in the light of the current financial climate.

PAY AND ALLOWANCES

A major feature of the military pay appropriation is that the activity Pay and Allowances comprises 85% of the total. This ratio is fairly consistent with those of all the armed forces. In the Marine Corps the responsibility of project sponsorship is divided between the ACofS, G-1 and the Fiscal Director.

The primary advantage is that persons responsible for the plans and policies relating to the execution of this appropriation are in a completely separate Division from those whose responsibility is the estimation of the monthly obligations, estimates of cost for proposed changes in personnel plans and policies or proposed legislation. This works as a check and balance system.

These two divisions are specialized in their particular phase of the operation. ACofS, G-1 can devote his consideration to strictly personnel planning: promotions, deployment, manning levels, recruit loads, officer and enlisted retention factors, promotion plans, types of special clothing issues - to mention just a few. The Fiscal Division cooperates closely, advises the ACofS, G-1 of costs of actual or proposed personnel policy or plan revisions or developments, as any financial advisor should. Thus, proposed changes generated primarily from the ACofS, G-1 and which will affect financial requirements, are evaluated by Fiscal personnel who are more familiar with intricacies of the varying pay and allowances. Accordingly, it is highly desirable that the Fiscal Division personnel have a background of disbursing and personnel management experience, be familiar with statutory entitlement and regulations or instructions based on such law.

In addition proposed changes in plans or policies or proposed legislation which have a monetary impact are reviewed by the Fiscal Director as to whether the proposal is financially feasible and desirable and supportable within the financial plan.

SUBSISTENCE IN KIND

This activity is composed of two projects:

Subsistence in Messes and Operational Rations. The funds are managed by the Quartermaster General of the Marine Corps. The major part of the funds are allotted by that office to the major field commands. Minor posts and stations may make charges directly to an open allotment held at Headquarters.

Operational rations, of which the C-Ration is best known to the public, and which are procured and held for use in the event of mobilization, are managed by the Quartermaster General, with planning assistance from the ACofS, G-1 and policy guidance from the ACofS, G-4, Supply and Logistics.

In the preparation of the budget, the primary responsibility of the Quartermaster General is to furnish the average daily rate of subsistence to be used for each area of troop deployment. The Quartermaster General also estimates the amount of reimbursable business. As part of the SOP package previously described, the ACofS, G-1 furnishes the estimate of numbers of personnel by area.

The Fiscal Director assesses one factor against the other, consolidates and prepares the budget estimate and narrative justification.

MOVEMENTS, PERMANENT CHANGE OF STATION

This budget activity is the most controversial area in the personnel budget insofar as Congress is concerned. Congress, in recent years, has apparently been convinced that there is, throughout all the services, too much "shuffling around" of military personnel, their dependents, and household goods. The Marine Corps, however, feels that its method of control is efficient and particularly suitable for its needs and could possibly be utilized by the other services. With one exception, all permanent change of station orders are issued by the Director of Personnel in accordance with approved plans and policies and who logically has been designated as project sponsor. The sole exception is the authority granted to the Commanding General, Fleet Marine Force, Pacific who may write orders only in selected cases; copies of such orders are forwarded to Marine Corps Headquarters for use by the Director of Personnel in monitoring the travel funds.

In attempting to prevent recurring reductions in travel funding by the Congress the Marine Corps has gone at considerable length in explaining the considerations that must go into the estimate. The Congressional concern is only natural when, on looking at the request, it appears that the total movement of military personnel may exceed the total number of personnel for that year.

The very nature of the composition of enlisted personnel plus the requirement for overseas deployment are the two predominant

reasons for travel, and together account for almost 90% of the total enlisted moves. The majority of enlisted personnel are non-career; they may serve for three or four years and then return to civil life. For example, to maintain a level strength of 158,000 enlisted personnel may require 47,000 recruits who must travel to initial training. Most of that number will be transferred to a permanent duty station, some to formal schools and the balance to overseas, all within their first year of service.

Those completing initial schooling may attend an advanced school or be sent to a post or station overseas. Thus, for 47,000 recruits there may well ensue an additional 50 to 60 thousand moves. With 13,000 travel orders to overseas (in addition to 10,000 who transferred directly from recruit training) and 23,000 returning from overseas there are already 133,000 moves. In addition, personnel separated from the service, perhaps another 50,000, will receive separation travel.

The point is that all of the foregoing moves are mandatory, they cannot be controlled as long as the personnel strength and the deployment must be maintained.

WHAT MAKES IT DIFFICULT - OR OF INTEREST

Well, then, what is so interesting or different about military appropriations? Why isn't it a relatively uncomplicated and simple budget to prepare, defend, and execute, like that of a civilian personnel budget. The reason is this. For the activity "Pay and Allowances," which as we previously have seen amounts to 85% of the total, there is no monthly payroll! This on the surface may appear appalling. If you don't have a payroll how do you know how much you are spending? This does not mean to infer that Disbursing Officers in the field are simply passing out military pay to the troops without any accountability. Far from it! Not by any means! They perform a valuable service. The Marine Corps Disbursing Officer's concept has always been that his primary purpose has been to serve the troops, that any Marine can get paid to the last day of entitlement. As a practical rule, of course, Marine Corps payday rolls around twice a month.

However, as a means of budgetary control the normally accepted tools of management for financial control are not available within the military pay system. The three normally accepted methods would be (a) the military pay record, (b) the Disbursing Officer's returns, or (c) the actual recorded expenditures.

THE MILITARY PAY RECORD (PAYROLL)

The vehicle for crediting pay and allow-

ances is the military pay record which is normally closed out and forwarded to Headquarters semi-annually.

a. But the important feature is that the numerous items of military pay and allowances credited separately on regularly closed individual military personnel cards are not summarized or recapitulated by the Disbursing Officer. In other words, as most readers are aware, the military individual's income depends on many things; certain "pays" depend upon his personal status, e.g., his rank, his years of service, and whether he does or does not have dependents and how many; others may depend upon his type of duty status or physical location, e.g., assignment to foreign shore duty or to duty involving flying or any of the other hazardous duties for which Congress has authorized special pay.

b. But nobody knows for certain what any service—Army, Marine Corps, Navy or Air Force is credited on the respective military pay records! Neither the Commanding Officer, the Disbursing Officer, nor anyone else sends to Headquarters or any other place a summary of the amounts credited as due the military personnel for any period of time—either in grand total of all items credited or by individual item.

To summarize, insofar as current fiscal management is concerned the payroll only gives information as to persons who were in some Disbursing Officer's account on the last day of the accounting period with the information being not only incomplete but after the fact.

RECORDED EXPENDITURES - VALUELESS FOR CONTROL

The Disbursing Officer does send in his monthly account current. This gives the U. S. Treasury, and the Headquarters, Marine Corps a "fix" on the expenditures. But there always exists the problem of unliquidated items of pay that are carried as unpaid each month by personnel overseas who have decided to draw only a portion of their total pay, allowing money to "ride on the books" until their return to stateside so they can buy that new Streako-V/8.

In addition, to further complicate the picture, items of allowances, are sometimes credited on the pay card which are not properly charged to the activity pay and allowances but which should be charged to the subhead Travel, Permanent Change of Station.

The regulations further provide for advance payment, imaginatively labelled by Military Personnel who draw them as a "DEAD HORSE." Such payments in advance of actual earning are made to assist in making a transfer cross country with dependents, which the servicemen usually cannot finance out of

current income. Such expenditure complicates the true obligation; the method of payment is by credit on the pay card hence requiring that the charge initially be made to Pay. When the travel voucher is turned in for liquidation after completion of the travel, accounting adjustments must be made.

As a final feature which prohibits the estimate of obligations based upon payments made to individuals is that the payment for a month is made in, let us assume, one pay check. However, the single check may include many items of credit; an unpaid balance from prior months, basic pay, flight pay and Sea and Foreign Duty pay.

From the foregoing it can be seen that an alternative method of financial control, that is a means of obtaining an accurate and timely method of the true obligation picture for pay and allowances, had to be devised.

WHAT, THEN, IS THE METHOD OF OBLIGATING

In the case of the U. S. Marine Corps it appears that someone had some foresight. At about the time the new military pay system was initially being discussed, the Marine Corps was in the throes of changing from a "hand operated" Muster Roll system of accounting for military personnel to an electrical accounting machine method by use of individual machine record card. The proposed new unit diary, as prepared and submitted each month by the commanding officer would be needed for personnel management both in the field and at the Headquarters (Departmental) level for overall planning and control by G-1. For management purposes the most important items of information required and as initially set up, reflect name, rank, serial number, component, expiration date of enlistment or term of obligated service, number and type of dependents.

By simply adding one more item of information there was made available the information required to manage the largest single item of cost i.e., basic pay. This item was a Pay Entry Base Date, which is a constructive date for purposes of longevity, or the creditable years of service for computing pay. All other items were needed for personnel planning aside from the purely fiscal management aspects. Basic pay and basic allowance for quarters together account for, in the Marine Corps approximately 83% of the total budget activity 1. Pay and Allowances of officer and enlisted personnel.

Basic pay is costed monthly by an application of the statutory rates of basic pay to monthly report which shows the number of personnel by pay grade and years of service. Basic allowance for quarters computation is similarly an application of the statutory rates

of allowance for one, two, or three or more dependents at the rates applicable to each officer or enlisted pay grade. Again a monthly report of numbers of personnel by grade for officer and enlisted personnel with dependents is available as the base.

IS THE SYSTEM WORKING

Like each service, the Marine Corps has its problems. Naturally, the obligations can only be as good as the unit diary is timely and accurate. Due to the multiplicity of personnel transactions and changes that arise in any month, errors are bound to appear as with any system. There is always the commanding officers problem of meeting the time schedule. Some personnel are always in transit and on temporary duty which can complicate any system.

Of course, there are other items of pay and allowance aside from basic pay and quarters allowances. For example, that portion of hazardous duty pay for crew and non-crew flight orders is monitored fairly well by the Marine Corps Division of Aviation. Sea and Foreign Duty Pay is estimated on the basic pay data, with adjustments for personnel in the pipeline to and from overseas and on maneuvers outside U. S. But, in that it furnishes the number of personnel, the personnel accounting system, again, is the basis for estimating the number of one-time costly items of allowance creditable upon release from the service or upon initial entry: reenlistment bonus, separation travel, initial travel, initial clothing issues, unused leave payments. The Marine Corps does extract from intermittently closed pay records (of personnel leaving the service or on reenlistment), the actual payments for unused leave as a basis for computing the average rate of allowance to apply to the current month numbers.

A by-product of the comparatively recent enactment of Social Security coverage of military personnel, we believe, has further substantiated use of the personnel accounting system. Under the new law the total wage credits for the individual servicemen must be reported. For the first complete bi-annual pay period the obligations as estimated for enlisted personnel amounted to \$137,277,000. The actual total amount as extracted from all closed out pay records and reported to the Social Security Board some seven months later amounted to \$137,293,000; admittedly, arriving at such close figures is accidental because of the immeasurable unknown errors within both accumulations.

In summary, the current military pay record system is deficient insofar as furnishing timely and accurate information with which to manage the military pay and allowances. How-

ever, the impracticality of a return to a system of a complete monthly statement of account for every individual within the military establishment, accompanied by a recapitulation of the value of each item of pay or allowance, is obvious. Because of the number of pay records involved the military establishment simply can not afford the additional administrative personnel that would be required.

Fortunately, thus far, the Marine Corps has not run into serious financial management trouble. However, as we have seen any constructive system of obligating for pay and allowance, whether based upon the Marine Corps method, or a system of sampling closed-out pay records, or any alternative system will have deficiencies.

For a period of at least ten months after the close of the fiscal year, when practically all expenditures including withholding tax and social security have been recorded, responsible officials of the four services anxiously wait to see if the estimated obligations as established were adequate. This could be considered to be a "head in the sand" attitude in a period of otherwise enlightened fiscal development.

Accordingly, it is considered that a strong argument could be made for consideration of the exemption of all active duty military personnel pay and allowance appropriations from the statutory provisions (Section 3679) which prohibit overobligation. For basically, the item of control can only be the number of personnel on board. There are already provided certain limitations in grade distribution. Certainly there could be provided, simply, a means by law or regulation to assure that approved planned personnel strengths were not exceeded. This alone should be the governing factor. To put it quite bluntly, for example, whether the approved strength may cost more dollars than planned simply because dependents, wives, or children were reported in greater numbers or earlier than anticipated should not be a criteria on whether a violation has or has not been made. Let's face it and put in on the record: the only alternative is to always have a little more money available than is actually considered to be required. For if an overobligation is created and the personnel plan has not been exceeded, there is no way of establishing for certain where the estimates were deficient.

KNOW YOUR OFFICERS

Mr. Oscar C. Lightner, National Secretary, ASMC

Born July 25, 1907, an American citizen, in the town of Ocampo, State of Tamaulipas, Republic of Mexico.

Attended public schools in various places in Kansas, Cuba, Louisiana and Texas. Considers Laredo, Texas his home town but maintains voting residence in Staten Island, New York.

Graduated from Washington University, St. Louis, Missouri and received his Masters Degree from the Harvard Graduate School of Business Administration, Boston, Massachusetts.

Started his accounting career with the General Electric Contracts Corporation in New York City and then transferred to the Division of Public Debt, Treasury Department in Washington, D. C.

Worked as credit union representative for the Federal Credit Union Bureau with headquarters in Atlanta, Georgia.

Has worked for the Navy Department as contract auditor and systems accountant from 1941 to the present less a stint during World War II as a reserve Supply Corps Lieutenant in the U. S. Navy.

Presently working for the Office of Navy Comptroller as a Supervisory Systems Accountant and holds a ready reserve commission as a Commander in the U. S. Navy. Member of the Federal Government Accountants Association and member of the Placement Committee of the Harvard Business School Club in Washington, D. C.

COST CONTROL THROUGH ARMY INDUSTRIAL FUNDS

Erle Coto

Traditionally, the Federal government has attempted to use control of expenditures (and obligations) in efforts to control operations and cost of operations. This has been unsuccessful. Steps are presently being taken towards use of "accrued expenditures" for the same purpose. Success through this means is at least questionable. These techniques are weak because a function and the cost of that function cannot be firmly controlled at any point short of that at which the operation is performed and the resources used therein are consumed in its cost. In addition to other inescapable factors, the fact is that in both of these systems indefinite and indeterminate quantities exist between the point of control and the point of operations and conversion to cost.

There are in existence in government today management systems which control operations in terms of cost. This paper is aimed at showing how this cost control operates and the advantages derived from its use in one of those systems, the Army Industrial Fund. The factual content of this paper is taken from a composite of the Industrial Funds of the Chemical Corps but represents the ultimate goal of them all.

THE BACKGROUND OF INDUSTRIAL FUNDS

Section 405 of Title IV, National Security Act of 1947, as amended, authorized the Secretary of Defense to require the establishment of working capital funds to finance industrial- and commercial-type activities which provide common service within or among the departments and agencies of the Department of Defense. The Army Industrial Fund is one of those working capital funds.

The first Chemical Corps Fund commenced operations on July 1, 1951. The substantial benefits achieved have resulted in expansion of the technique to every Chemical Corps installation, the last Fund being initiated on July 1, 1957. Including Industrial Funds of other Department of Defense agencies, this method of management is now being used in such diverse operations as arsenals, printing plants, research laboratories, proving grounds, depots, air and sea passenger and cargo carriers, and numerous manufacturing plants.

These systems take their name from the method of financing. Their initial "cash" balance was provided by the Congress from unused balances of prior appropriations. All purchases of labor and materials are charged against the Fund, thereby eliminating the impossible fiscal necessity (and corollary accrued expenditure requirement) for classification to an appropriation or other budget program at the time of purchase (or receipt).

In addition to this initial financing, inventories existing at an installation are screen-

ed and those items and quantities for which there is a foreseeable need identified. "Customer-furnished" material on hand is similarly identified and both inventories are capitalized into the Fund. Outstanding liabilities, including employee's leave and the value of the "customer-furnished" material are also established and set up within the Fund.

Each installation uses an individual double-entry, accrual accounting system to develop the cost of the jobs that it does. Although the complete chart of general ledger accounts is not standardized among installations, reporting requirements of higher echelons have the effect of fixing uniform general ledger control accounts. These, of course, provide data summarized to the level required by those echelons. No effort is made to standardize the cost accounting format; this is designed to fit the management pattern and organization of the individual installation.

Following accumulation of the accrued cost of performance of jobs done by the installation, the ordering agency is billed for the cost. Payments are credited to the installation's Industrial Fund, replenishing the "cash" balance. This eliminates the present unworkable fiscal "anticipated reimbursements" technique. The ultimate financial target of Industrial Fund operations is achievement of a zero profit and loss balance.

Creation of a "buyer-seller" relationship has frequently been advanced as a primary advantage of Industrial Funds, due to the pressure exerted on costs by the "buyer." This relationship undeniably has an effect but this is reduced where, due to assignment of responsibilities, the buyer is indentical with the seller. However, experience has shown that even where a valid buyer-seller relationship does not exist there is a positive incentive towards getting the most out of the money. This is due to the fact that the installations operate under "cost limitations." Accordingly, the author prefers to call these "cost control" systems.

INDUSTRIAL FUND OPERATIONS

Industrial Funds are set to work through the offer and acceptance of orders. Although standard prices are used for some products, more frequently the first action is a query to the installation as to the cost and other factors involved in doing a specific job. In the latter cases, the installation, using some form of estimating sheet, computes an estimated cost. The computation is based, to the maximum extent possible, on engineered standards for the direct costs plus an overhead cost developed through flexible budgeting. These flexible budgets, established previously, show the anticipated overhead costs within each segment of

the installation at each level of production activity. The summarized cost estimate, based on this data or taken from the standard prices, is returned to the originating agency. If a firm order is received the estimates, whether individually developed or previously developed for a standard price, become internal operating budgets controlling performance. In this way the order, recorded as a fiscal obligation by the ordering agency, becomes a cost limitation on the Industrial Fund installation and all control within the installation is based on allowable cost. The sum total of all internal operating budgets on hand, time-phased for control, become the installation's internal operating budget. This is subdivided by divisions, etc., as appropriate for management control.

As the order is placed in production, actual costs are accumulated against the internal operating budgets, both on a job order and organizational basis. Reports showing actual costs against those budgets are submitted periodically to supervisors at the various echelons. Pressure is thereby exerted on each subordinate echelon to hold costs down; savings in one organization are available for unforeseen contingencies in others working on the job. (Neither expenditure nor accrued expenditure control can exert this pressure. Under those, once a purchase is made and the goods or services are delivered, no economy will affect the available balance of the allotment). The Industrial Fund procedure is also further modified where possible through use of standard costs. Variances from budgeted cost and from standard costs are analyzed as to cause, facilitating "management by exception." A detailed example of internal industrial Fund operations was provided in a paper by Daniel Ostrosky in the December, 1958, issue of the Federal Accountant.

ADVANTAGES OF INDUSTRIAL FUNDS

An exhaustive listing of the benefits of this cost control, especially when compared to the traditional fiscal control or the proposed accrued expenditure control, would be too long for this paper. However, a few examples will show the scope and effect of the cost methods.

First, under appropriation-allotment methods, there is a strong tendency towards organization to follow the control format. For example, if carpentry work is necessary at an installation to fulfill the purpose of two or more appropriations or allotments, there is a tendency to set up duplicating carpentry shops for each fiscal sub-division. This condition was actually found in the surveys that preceded decision to adopt Industrial Funds. The tendency is intensified by the impossibility of accurately distributing the cost of a centralized shop between the appropriations or allotments of the expenditure (or an accrued expenditure) limitation. In both of the latter

cases incoming goods or services, or orders therefor, must be classified to and charged against the appropriation or allotment at the time the order is placed or the goods or services received. This is impossible except where the order or goods received or services go into direct costs. Where there is a limitation on cost instead of separate appropriations or allotments, the motivation is the other way — in favor of consolidation to reduce costs, and this has actually resulted in those cases where separate shops previously existed. There is a similar tendency towards separate inventories under appropriation-allotment control which follows the same reasoning.

Second, under cost control there is less incentive to build up inventories. All inventories are financed initially from the revolving fund and there is no annual allotment of expenditure, or accrued expenditure, authority to promote the building up of stocks before that authority lapses. In fact, build-up of inventories will result in higher costs and higher prices with an impetus towards pricing the installation out of business. Such inventories will always increase costs of the central supply operation, including the costs of waste, deterioration, neglect, and obsolescence associated with excess.

Third, under cost control, management is better held responsible for mistakes. Returning to inventory, overbuying will not only increase central supply costs but, when it is necessary to dispose of excess, the loss on disposal is charged against management. Such losses are concealed under the traditional fiscal control. If buried in cost budgets, this will also apparently justify higher accrued expenditure appropriations. The author's preference for balance sheet limitations together with "allotments" of cost is aimed, in part, at forcing disposal of excess inventories.

Fourth, data previously unavailable is now being produced. Probably the most important information is the cost of products and services. Statistical costs were previously available under allotment control but, due to the nature of that control could not be considered too reliable. There is one instance of new information, though, considered particularly worthy of note. It has always been known that peacetime operation of military manufacturing establishments was required as a preparedness measure. Accordingly, some of these are kept operating at fractional capacities for the benefit of the equipment and to keep an experienced nucleus of personnel on hand. The real cost due to operation at such levels has never before been known. Under Army Industrial Funds, as the Korean emergency receded, less and less production was required and a point was reached where products were showing excessive costs. It was decided to attempt to separate installation costs into those attributable to production and those properly chargeable to military preparedness. Accordingly, the elements and cost

of overhead at zero production were determined and identified and, using flexible budgeting, the costs for the same elements were found for all levels of production. It was postulated that at full capacity (an 8-hour day, 5-day week, 50-week year) all costs should be absorbed in production. Now, given a planned program of production, it is possible to put a price tag on the military preparedness cost of keeping the installation open.

Fifth and last, has been the complete change in emphasis at installation level from living within the amount of allotments available to cost and management in terms of cost. Under cost control, overhead cost "saved" anywhere within the installation is available for use for overhead functions elsewhere as required. This has had a tremendous effect in internal economy and efficiency. Many examples of this effect have been found. The day before one installation went under an Army Industrial Fund the commanding officer, already familiar with Fund operations, returned his private car and driver to the motor pool. At another installation an officer, given a new assignment, had his choice of a large building, expensive to operate, and a smaller but adequate building — and chose the latter. At yet another installation, a supervisor who had built up big "bench stocks," finding the effect on his future cost allowances, returned them to central supply. In many instances telephones were found to be superfluous and a host of similar economies were effected. Under expenditure or accrued expenditure control there is not incentive to reduce such costs.

Some time ago, the Chemical Corps went looking for concrete results of this cost control and checked through six years of operating statements. Due to the diversity of production only a few cases were found where an identical product had been made at various intervals since inception of Army Industrial Fund operations. But in every case located, the unit cost of the product showed a steady decline despite the present increasing trend in costs of labor and materials.

DISADVANTAGES OF INDUSTRIAL FUNDS

The budget and accounting report of the second Hoover Commission alleges on page 39 that "The principal disadvantages of these revolving funds are that they minimize congressional control and that their wide spread use can result in too many prockets of funds which become cumbersome from the stand-point of efficient administration." Note carefully that the Commission is speaking from the viewpoint of fund control for Congressional use.

In answer to this the author proposes to lift two other Commission statements out of context, and feels justified in doing so. All statements made by the Commission supporting control over costs are intended for agency use only. The author feels that both of the following

quotations are statements of basic principle and apply with equal force to the agencies and to the Congress.

On page 36, discussing accrual accounting, the Commission says: "It (fund control) places emphasis on the ability to live within allotments rather than on the usual management criterion of performance in terms of cost." So herein they condemn the fund control they wish to perpetuate for Congressional use.

On page 68 of the task force report, with respect to executive agency control, will be found "There is (a) tendency in the Government to attempt management control through the device of controlling funds. We believe that, except in very simple situations, it is unsound to rely on this technique to effect management control." Again there is a criticism of fund control.

It is the contention of the author that if fund control in terms of expenditures was ineffective for Congressional control, fund control in terms of accrued expenditures will be no more effective. Accordingly, the objection of the Commission to Industrial Funds cannot be accepted as well-founded. It appears that the Commission is considering a Congressional review of only Industrial Fund "cash" rather than the costs shown on the operating statements.

Despite the title of this section of this paper, it is considered that Industrial Funds have no disadvantages other than any common to double-entry accrual accounting and the associated management techniques. These Funds do have handicaps, though, which have prevented their development to maximum usefulness. These fall into two categories, those due to the incomplete scope of the system and those due to "hangovers" from fund control.

Incomplete Scope of Industrial Funds

In the first place, the statute establishing the Industrial Funds specifically provided that certain costs would be excluded, in most instances, from those reimbursed to the installation. One of these is military pay and allowances, another is depreciation on fixed assets used in production.

The exclusion of military pay and allowances was undoubtedly due to the fact that a separate appropriation is currently provided for this purpose. This might not be too important in the case of a static organization where military personnel rotated in was equal to military personnel rotated out, where production continues at a level rate, and where determination of total cost of a product is unimportant. But where there is fluctuation, particularly where switches are made in total personnel and between military and civilian personnel in the same position, it impedes sound budgeting and, consequently, sound management. It also permits this cost to

evade the pressure exerted by cost control.

The same applies to exclusion of depreciation. In the preceding discussion, it was shown how inclusion of inventories in the Industrial Fund had tended to reduce excess inventories. There seems to be no good reason to believe that if fixed assets are included, it would not tend towards reduction of these, too. Inclusion of depreciation would raise a number of other questions, mostly concerning replacement of assets. It would be undesirable to freeze any physical plant since circumstances might indicate either expansion or contraction. It is believed depreciation costs should be included in, and reimbursed to, Industrial Funds but this should not be done until a comprehensive policy with respect to approval and financing of replacements is established.

There should also be built into the Industrial Fund system a few additional controls; an article by the author^(a) referred to these as balance sheet limitations. At the present time management control over these values rests on rather indefinite policies that are subject to change with rotation of administrative personnel. First, it is believed that a review of fixed assets and the cost of retaining those assets against programmed work should be built into the system. So far as the author is aware, this operation is not sufficiently integrated for the best management and a part of the necessary data, depreciation and maintenance cost, is not a part of such reviews. Second, since inventory levels are a particularly sensitive spot, it is believed that the existing effect of cost control should be reinforced by a positive limitation on those levels.

In addition to the foregoing, there are inevitably resources existing at Industrial Fund installations not included within the Fund but usable in operations. Non-Industrial Fund inventories may arise from any of a number of causes. Upon activation, only that part of existing inventories for which there is a foreseeable need is capitalized, usually leaving an uncapitalized surplus; normal purchasing practice requires a slight degree of overbuying which is properly chargeable to the ordering agency, frequently leaving a paid-for residue; usable excesses from termination of private contracts may be shipped to an installation, and there are always excess lists being circulated. Policies prohibiting use of such in-

ventories except when purchased by the Fund have been established but Congressional reliance upon fund control provides a strong stimulus towards the broadest possible interpretation of those policies. The same will be true under the accrued expenditure type of fund control. In any instance where such inventories are used without being included in cost, the cost data and cost management deteriorates.

If the Industrial Fund were expanded to include every operation and every value within the installation, it would solve a part of the problem. On the other hand, if the Congress will state its appropriations in terms of allowable cost, substituting fund control by department or agency for fund control by appropriation, it will solve all problems.

"Hangovers" from Fund Control.

There are two principal handicaps due to this; time and experience would resolve both except for the results of perpetuation of fund control.

First, conditioned by past experience plus continuing calls from higher echelons for expenditure and obligation data, intermediate and higher echelons of management sometimes seem reluctant to relinquish fund control and substitute management in terms of cost.

Secondly, under fund control, an effort has been made to manage and control local components of overhead from the higher echelons rather than providing technical supervision in this field, with authority for decision vested in local commanders. This affects the design and responsiveness of the accounting system to local management requirements and entails added costs for the additional accounting and reporting.

In conclusion, the author has shown that the only valid criticism which can be levelled at the Industrial Funds can be attributed to two causes; the present insistence on fund control (which would be perpetuated by accrued expenditure control) and the fact that these Funds do not cover all assets, liabilities and costs incurred within an installation. Remove these limitations on a Government-wide basis and the techniques used within these Funds will facilitate accomplishment of improved financial management as contemplated by the second Hoover Commission.

**ACCOUNTING OBJECTIVES — RELATION TO BUDGETING —
COMPTROLLER GENERAL'S ACCOUNTING PRINCIPLES AND STANDARDS**

**Mr. Raymond Einhorn, Associate Director, Accounting & Auditing Policy Staff,
General Accounting Office**

Summary by: William Brown, James Duby, Andrew Moran, Anthony Triolo.

FOREWORD

The following report is taken from the "Digest of Proceedings of the Financial Management Institute" conducted in the Fall of 1958 as part of the Financial Management Intern Programs. The Management Intern Program is an executive development activity sponsored by the Interdepartmental Committee on Management Intern Programs and conducted by the United States Civil Service Commission. The Digest was prepared by the interns as an aid to the Commission, to the Interdepartmental Committee, and to the lecturers in organizing subsequent programs and for later reference by the interns themselves.

Preceding speakers have discussed with you budget formulation and execution. These speeches furnish a background for the discussion of accounting and its relation to budgeting and other controls. I shall emphasize accounting objectives, and the development of accounting principles and standards by the Comptroller General. Mr. Walker Campbell of the Atomic Energy Commission in his talk later this morning will more specifically illustrate the fundamentals as applied in an operating agency. The speakers who follow us will cover subjects such as financial reporting.

As an introduction and because I shall refer to it during my discussion, please open your copies of Title 2 of the GAO Policy and Procedures Manual for the Guidance of Federal Agencies. Title 2 consists of 3 parts: Accounting Principles and Standards; Accounting Procedures; and Internal Audit. The bibliography cited chapters from parts one and two. The procedures outlined in the second part of the title are advisory rather than mandatory. They are intended to explain and illustrate the application of the accounting principles and standards, with primary emphasis on assisting the various agencies in working out their own systems and procedures. Note the contrast from General Regulations 100 which prescribed uniform accounting procedures.

Before discussing accounting principles, let us consider the basic premises of accounting. They all relate to the concept of usefulness. I shall mention some of the premises and objectives and we shall discuss them informally as I tell you what I think about the purposes of accounting for the Federal government. These three premises should be kept in mind:

1. Decisions are based on facts and estimates, and reasoned forecasts necessitate information.
2. Primary purpose of accounting and of cost data is to help guide operating management in making plans

and determining from actual results what has to be done to make plans successful.

3. Financial management is a part of total management.

Accounting consists of recording physical and operating transactions in financial terms, the classification of these transactions, summarizing, and reporting, interpretation, and analysis for the users of the data. There are several objectives. For example, there is the historical and accountability need, including the idea of custodianship and the legal concepts. Secondly, there is the modern objective of responsibility accounting, that related to the carrying out of functions and authorized programs or whatever your basic assignment may be. Thirdly, and I recognize the overlap among the objectives, accounting should be dynamic to assist in decision making on a day-to-day basis and for the long term. There is quite a range among the agencies, as you know, in using accounting for these objectives. More specifically, accounting may be used to assist management in:

1. Assessment of performance
2. Planning for future operations
3. Financial control (also embraces financial measures such as obligations, disbursements, assets, revenues, costs of operations)

In considering these objectives, note that in the Federal government we have to have accounting for two kinds of entities, the fund entity and the operating entity. The fund entity is the appropriation, the allotment, the revolving fund. The operating entity is the function and organization responsible for operating performance. It may be financed by one or more fund entities, in addition to certain transfers. It is necessary to account for each fund — the accountability and legal aspects are important and not secondary. But they are not exclusive. It is also essential to recognize

responsibility for carrying out the functions, and to employ responsibility accounting. Accounting should be tailored to management needs and correlated with assignments of management responsibility at all levels. The accounting for the two entities should be integrated as explained in Title 2 of the GAO Manual.

Congress has specified that agency accounting systems should provide:

1. Full disclosure of financial results
2. Information for management purposes
3. Effective control over and accountability for all funds, property and other assets
4. Reliable data to serve as the basis for support of budget requests, control of budget execution, and for reports to Bureau of the Budget
5. Information to comply with Treasury central accounting and reporting responsibilities.

The responsibility for the system of accounting and internal control rests with each agency. The General Accounting Office has four responsibilities with respect to accounting: (1) prescribing accounting principles and standards to which agency systems must conform; (2) cooperating with agencies in developing systems; (3) reviewing accounting systems submitted for approval; (4) evaluating accounting systems for adequacy in achieving the above list of five Congressional requirements. It works with the Bureau of the Budget and the Treasury in carrying out its responsibilities in these areas as appropriate. The accounting principles and standards referred to in (1) are used in carrying out the cooperative development, review, and evaluation responsibilities.

The accounting principles and standards are developed to provide guidelines so that agency systems may be designed to accomplish the above objectives and requirements. Accounting principles are not like scientific laws. The latter are universal, such as the law of gravity which holds true in every circumstance and geographical and celestial area. Accounting principles often tend to be standards from which departures may be permitted under justifiable conditions. The Comptroller General's accounting principles and standards are in chapter 1200 of Title 2 of the Manual; their application and use are illustrated in the accounting procedures chapters 2000-8500. They are developed primarily through special studies and the review and evaluation of existing and proposed accounting systems, procedures, and practices in relation to management needs and responsibilities and congressional needs for financial and operating data. Accounting policies are also developed as a result of recommendations made during audits

of agency accounting and other operations, and through joint discussion of problems by the General Accounting Office, the Bureau of the Budget, the Treasury Department, and other agencies under the Joint Program to Improve Accounting in the Federal Government. Factors which influence the development of the principles and standards include: usefulness, including disclosure; problem areas noted and examined; new developments; objectives of accounting; practices observed and evaluated; Bureau of the Budget and Treasury needs; Congressional needs; review by GAO, by Bureau of the Budget, by Treasury, and by other operating agencies.

Mr. Einhorn cited and briefly discussed specific principles and standards in chapter 1200 of Title 2, such as those related to decentralized accounting; financial reporting; financial controls including those dealing with expenditures and costs; accounting support for the budget; allotments; accrual, cost and property accounting.

Examples of areas in which new or revised statements of principles and standards may be issued — some are now in process — are:

1. Property accounting — about six memoranda on subjects such as lease-purchase contracts, transfers, depreciation, and capitalization criteria.

2. Revision of Memorandum No. 2 to add the interrelationship of obligations and accrued expenditures to the concepts now in the memorandum.

3. Accounting for actuarial liabilities.

Let us consider accounting principles and standards and accounting procedures in relation to budgeting and other controls for funds and costs. Controls over funds are aided by accounting for appropriations, apportionments, allotments, obligations, expenditures, and disbursements. For management use there should also be accounting controls in terms of functions and their costs, both past costs to show compliance with budgets and for evaluation, and estimated future costs for planning purposes. In exercising these kinds of controls, accrual accounting is very useful. Recording transactions under the accrual basis for obligations, accrued expenditures, cost of work done, and disbursements is portrayed in the chart on the vu-graph (Figure 2000-1, 2GAO 2000). The two characteristics evident are that each of the four types of transactions is recorded in the period in which it occurs, and all transactions are recorded. In some agencies the amount and purpose of obligations and costs incurred may be very similar, and therefore the agency may make a periodical conversion to the accrual basis, as described in 2 GAO 1282 and 4550.

The chart (2 GAO 6500) on Planning and Executing a Program for Cost Type Budgets emphasizes that programs are based on the work to be done and its cost. Note the transactions for control purposes, the available resources, and how the program is set up to relate the planned work to its cost and in turn to the new financing required. The third column on "Program Controls" stresses the interrelationship of operating budgets, fund controls, cost controls, and reports, with the scope of the activity.

In accounting for obligations and expenditures, it should be recognized that allotment accounting should not be a substitute for cost accounting. Allotments and the obligation accounting should be at a high level, and the cost budgeting and cost accounting should be in whatever detail is required for management purposes at each level of operations. It is essential that accounting assist in the administrative control of funds. The use of an allotment ledger and an accrued expenditures register, 2 GAO 4500, are examples of records to be used. It is not necessary to use an allotment ledger or to prevalidate all orders at all times; satisfactory administrative alternatives are sometimes available, as discussed in 2 GAO 1200 and 4500. "Bookless bookkeeping," the inventory method for obligation control, is used in some instances.

Costs should be used for management control of functions, activities, and organizational units by: (a) relating costs to accomplishments and to those responsible for performance; (b) relating costs to budgets, and determining and investigating variances; (c) making unit costs comparisons; (d) comparing costs of other periods and similar operations; (e) helping to choose between alternatives, such

as to buy or make, replace or repair, and use force account or contract; (f) developing cost standards; (g) application in work measurement techniques; (h) interpreting cost trends. Management's attention should be focused on all resources, rather than only on the resources ordered from the new appropriation or allotment. Accounting makes its maximum contribution when there is correlation of programming, budgeting, accounting, and reporting, with costs as the common denominator.

Eight major ideas for you to retain are:

1. Accounting provides factual information which when properly presented and intelligently interpreted, gives management a valuable supplementary operating tool.
2. Accounting assists in planning, budgeting, control of operations, and in evaluation of results.
3. Costs of programs should be the responsibility of individuals in charge of the individual activities.
4. Programming, budgeting, accounting, and financial reporting should be based on the common denominator of cost data consistently classified.
5. Accounting contributes effectively to the internal controls — one of which is internal audit — which are essential to good management.
6. Accounting is an integral part of total management effort (and not something separate) at all levels of organization for the primary purpose of aiding operating officials.
7. Effective accounting is a responsibility of agency management.
8. Accounting systems should be tailored to the needs of the individual agency.

PLANNING AND EXECUTING A PROGRAM FOR COST TYPE BUDGETS All programs are based on the work or service to be accomplished and what that work will <i>COST</i> .		
THE TERMS USED (Measured in Dollars)	HOW THE PROGRAM IS SET UP	PROGRAM CONTROLS
Transactions for Control Purposes OBLIGATIONS - Goods and services ORDERED regardless of when received, paid or used. ACCRUED EXPENDITURES - Goods and services RECEIVED regardless of when ordered, paid or used. COSTS - Goods and services USED regardless of when ordered, received, or paid. DISBURSEMENTS - Bills PAID , regardless of when ordered, received, or used Available Resources APPROPRIATIONS Funds made available by Congress INVENTORIES - Goods in stock and available for future use. OTHER AVAILABLE RESOURCES - Things for future use, such as items in process, cost in suspense, and other undistributed expenditures.	<p>1st COST OF THE WORK + or - Changes in Inventories + or - Changes in other available resources. - Goods and Services received without charge ↓ 2nd ACCRUED EXPENDITURES + Increases in Undelivered Orders - Decreases in Undelivered Orders ↓ 3rd OBLIGATIONS - Reimbursements and funds contributed by others - Unobligated funds on hand ↓ 4th NEW APPROPRIATION REQUIRED</p>	<p>ESTIMATES AND OPERATING BUDGETS Control the <i>SCOPE</i> of the activity.</p> <p>CONGRESS Through APPROPRIATIONS controls the maximum AMOUNT of ALLOTMENTS that can be made (on an obligation basis)</p> <p>APPORTIONMENTS Control maximum amount of ALLOTMENTS that can be made and the RATE at which OBLIGATIONS can be incurred</p> <p>ALLOTMENTS AT BROAD LEVELS control the AMOUNT of OBLIGATIONS that can be incurred</p> <p>OPERATING BUDGETS Control the COSTS that can be incurred.</p> <p>REPORTS Of results reflect variations in the ESTIMATES and furnish a basis for control of OPERATING BUDGETS</p>

BUDGET EXECUTION IN AN AGENCY AND SYSTEM OF ADMINISTRATIVE CONTROL OF FUNDS

Mr. James A. Miller, Deputy Assistant Controller for Budget, Atomic Energy Commission

The development of a cost based budget for the Atomic Energy Commission and the administration of funds on the basis of costs were more a matter of necessity than choice. When the Commission was established, it took over and continued the budget system, based on obligations and expenditures, developed by the Department of the Army. It was soon evident that the traditional allotment system and reports on obligations and expenditures were not an adequate basis for financial control. Of perhaps greater importance was the need for data reflecting program accomplishment for use by management. Beginning with the fiscal year 1947 and continuing through 1950 the budgets were presented and justified to the Bureau of the Budget and the Congress in terms of obligations by programs and sub-programs. Considerable difficulty was encountered in presenting and justifying the estimates on this basis. The House Appropriations Committee also began to feel the inadequacy of this approach to an understanding of our requirements, and in its reports on appropriation bills expressed dissatisfaction with the budget presentations in those earlier years.

These problems of budget presentation and administration were due principally to the nature of the programs, the organization of the Commission and its methods of contracting. The activities of the Commission include manufacturing, research and development, licensing and regulation, and cooperation with domestic industry and other countries. However, over the years, by far the major portion of the Commission's budget has been for the production of special nuclear materials and atomic weapons. Increasing emphasis, however, is now being placed on the development of reactor concepts.

Where a department or agency is organized along programmatic or functional lines, it is a relatively simple matter to develop a system of allotments, including the reporting of obligations and expenditures, by program or function. In that case responsibility for function and obligation of funds would normally rest in one unit. With only isolated exceptions, this condition does not exist in the organization of the Atomic Energy Commission. The organization is headed by a five-man commission, with a general manager who is responsible for overall administration. In addition to the usual staff divisions, including legal, personnel, security, finance, etc., the organization of the Commission includes a "Program Division" responsible for coordinating and directing each of the major programs as indicated by the

following titles: (1) Division of Raw Materials, (2) Production Division (Special Nuclear Materials), (3) Division of Military Application (development, testing and production of weapons), (4) Division of Reactor Development, (5) Division of Research, (6) Division of Biology and Medicine (research), and (7) Division of Isotopes Development. This phase of the organization follows the pattern of the budget and cost accounting classification. However, the function of these divisions is primarily one of management and not an operating one. The field organization is primarily geographical and all twelve offices are responsible for some phase of at least two or more programs. Some of them, such as the Oak Ridge Office, participate in all of the programs. Therefore, while Oak Ridge reports through the Production Division administratively, they are subject to program direction from each of the divisions mentioned above. Furthermore, many of the contracts, and most of the major management type contracts, cut across program lines. For example, one contract for the operation of the Oak Ridge complex includes the operation of both production plants and laboratories and includes work under all of the programs previously mentioned.

It was, therefore, impossible to record, on any reliable basis, obligations or expenditures by program and much less by activity within a program. This procedure was tried for several years with the result that the major portion of obligations and expenditures were reported on a "prorated" basis. As a practical matter, in the absence of any better basis, the proration was predicated on the budget, and therefore, in no sense did status of fund reports reflect a measure of performance by program or activity.

The third complicating factor relative to our method of contracting is very important in this discussion. Unlike most other government agencies the Commission operates most of its facilities under management contracts with industrial firms or universities. Obligations are incurred annually and cash is advanced from time to time. Therefore, the monthly trend in obligations and expenditures was of little or no value in measuring performance, evaluating the adequacy of funding, or determining the status of funds at any given time during the year.

It should be noted that the foregoing discussion is applicable primarily to operating expenses and is not equally true regarding budgeting for and controlling capital outlays for plant and equipment. Therefore, the dis-

cussion which follows will deal primarily with the solution developed for financial control of operating funds and programs within the Atomic Energy Commission. The program in those early days was concerned primarily with manufacturing processes and was carried out in general under management contracts with large industrial firms. These firms in line with the practice in their own operations maintained cost accounting systems of various types. These systems, however, were not coordinated and it was not, therefore, possible to prepare overall reports for the operations of the Commission as a whole. Under the leadership of Paul Green, who was then Controller of the Commission, and Lindsley Noble, Assistant Controller, a system was developed for reporting costs and financial data in a uniform manner. This provided the means for preparation of complete cost and financial statements for the Commission's operations. The system was installed and in full operation by the beginning of the fiscal year 1949. Accounting data for 1948 was "recast" on a uniform basis so as to provide a comparable report for that year. The logical sequence was the recognition of the desirability of using this cost data in the budget process.

After a short period of successful operation under the comprehensive cost and financial accounting and reporting system, the question was raised as to the need for continuing allotments and reporting based on obligations by program and sub-programs, particularly in view of the arbitrary basis for recording such amounts as were reported in the status of allot-

ment reports. It was suggested by some that the allotment system and reporting of obligations be eliminated. Such suggestions, however, were based solely on the fact that the cost and financial reports furnished more complete and reliable data for management and control of the program. The proponents overlooked the fact that the Commission, while primarily industrial, did not rely on revenues (as in the case of government corporations) but rather was funded through annual appropriations provided by the Congress and therefore was subject to control of obligations incurred and the provisions of the Anti-Deficiency Act.

The solution was the development of a system based on control of program through costs with a simplified allotment system to control obligations to the extent necessary to comply with laws and regulations regarding the expenditure of federal funds. These two elements of control were integrated under a system of financial plans.

The financial plan consists of a statement of costs by program, reconciled to obligational authority required to fund the program. This is developed by adding to or subtracting from costs, the increase or decrease in inventories and goods and services on order. The total budget or financial plan for operating expenses of the Commission is prepared and presented on this basis. The details of this approach are as shown in the printed budgets for the fiscal years 1951 to present. The following is a condensed version of the "Program by Activities" as contained in the 1960 budget:

	In Millions		
	1958 Actual	1959 Estimate	1960 Estimate
Accrued Costs:			
Raw Materials	\$ 599	\$ 697	\$ 740
Special Nuclear Materials	568	561	581
Weapons	433	542	517
Reactor Development	309	373	393
Physical Research	91	129	151
Biology and Medicine	35	43	49
Other Programs	95	98	102
Total Program Costs	2,130	2,443	2,533
Revenues Applied	-33	-28	-31
Total Program Costs Funded	2,097	2,415	2,502
Changes in Inventories, Goods and Services on Order and Other Working Capital	77	39	18
Total Obligations	<u>\$2,174</u>	<u>\$2,454</u>	<u>\$2,520</u>

The administration of the budget and control of obligations follows the same pattern. After enactment of appropriations, an overall financial plan for the year is developed within the limits of funds appropriated and consistent with the action taken by the Congress as expressed in the reports on the bill, etc. In turn this overall plan is broken down into individual plans for each office or division having direct responsibility for execution of the program and for incurring obligations. These plans are issued only to offices having direct operating responsibility and are not issued to program divisions which are concerned primarily with coordination and overall direction and control. The plan for each office sets forth the annual cost ceilings for each of the major programs for which they have a responsibility. To this is added or subtracted the increase or decrease in inventories, in goods and services on order, etc. Where one office has responsibility for costs and the obligation will be incurred by another office

the plans are adjusted by adding the amount of the transfer to the office incurring the obligation and subtracting a like amount from the obligational authority allotted to the office responsible for the cost.

Under the system of financial plans outlined above, there is no allotment by program or activity. As in the case of most Federal agencies, the Atomic Energy Commission's appropriation contains limitations on personal services, travel, etc. Therefore, within the total financial plan, separate allotments are issued for amounts subject to these limitations. The balance which usually amounts to about 90 per cent of the funds made available to an office, is covered in a single lump-sum allotment. All allotments are apportioned on a quarterly basis to insure compliance with the overall apportionment approved by the Bureau of the Budget.

The following example illustrates the relationship between the financial plan and allotments for an individual office:

Financial Plan — Office "A"
Fiscal Year 1959
(In Thousands)

	Approved Plan
Accrued Cost:	
Raw Materials	\$ 2,500
Special Nuclear Materials	104,000
Weapons	20,000
Reactor Development	56,300
Physical Research	15,200
Biology and Medicine	8,000
Other Programs	9,000
Total Costs	<u>\$215,000</u>
Revenues Applied	<u>-12,000</u>
Net Costs	\$203,000
Changes in Inventories	Minus 2,000
Goods and Services on Order	5,000
Transfers between Offices, net	Minus 4,000
Planned Obligations	<u>\$202,000</u>

Allotments would be issued as follows:

		(In Thousands)			
	Total Allotment	Apportionment by Quarters			
		1	2	3	4
Personnel Services	\$ 10,000	\$2,000	\$2,500	\$2,500	\$3,000
Travel	4,000	1,000	1,000	1,000	1,000
Newspaper and Periodicals	—				
Entertainment Expenses	—				
All Other	188,000	98,000	20,500	60,500	9,000
Total	<u>\$202,000</u>	<u>\$101,000</u>	<u>\$24,000</u>	<u>\$64,000</u>	<u>\$13,000</u>

This system, therefore, holds the control through allotments to the minimum necessary to insure compliance with limitations established by law. The real control of program and activities within programs is administered on the basis of costs by program and by individual activities or projects. (In fact, our system includes more than 400 such accounts.) The office receiving a financial plan further distributes the costs by month. This projection of costs, together with the monthly reporting of costs on a comparable basis, provides management and the fiscal officers of the agency with an adequate tool for measuring performance and determining the real status of funds. As an adjunct, there is a minimum of monthly reporting of obligations and expenditures by office, appropriations, and limitation. This reporting is necessary to insure overall compliance with the provisions of the Anti-Deficiency Act.

The financial plans showing the cost ceilings are supported by detailed breakdowns which indicate the estimated costs for each activity of function within each major program. The monthly distribution of estimated costs are made in the same detail. Management controls and program direction are based on the monthly review of actual cost experience as compared to projections with particular emphasis on overruns and underruns. Each monthly cost report submitted by field offices is supported by a narrative statement commenting on significant variances between estimated and actual costs. To facilitate management, individual items are consolidated into larger categories for the use of higher levels of management of the headquarters. However, the detailed information is available and used at the working level in the headquarters and by the managers of field offices.

As in any program, the annual financial plan is by no means fixed. New requirements arise which must be funded from underruns or actual cutbacks in other activities. On the basis of monthly costs and reviews of cost experience, revisions in plans can be and are made continually during the year. Whenever there is a significant change in the level of a major program, the financial plan and related cost projections by month are revised.

Each office submits monthly the traditional status of funds report for each of the limitations for which funds have been allotted. These include a statement of funds available, amounts obligated, amounts expended, the unpaid obligations and unobligated balance. The reports are seldom, if ever, used by operating officials. They are used primarily by budget and fiscal personnel to insure compliance with approved apportionments. As the apportionments are based on the timing of major contract actions, a review of the variances from approved ap-

portionments does focus attention on delays, etc., in contracting, which is valuable information when considered in connection with cost trends. Of course this type of information on personal services, travel, and other smaller specific limitations is identical to that prepared and used under any traditional fund accounting and reporting system and is used within the same manner and extent as in any other government agency.

The discussion so far has been limited to the application of cost and obligation controls within the Commission itself. At the governmental level, including both field offices and headquarters, the Bureau of the Budget and the Congress, the review of budgets and related actions, and the controls are in terms of costs by activities or functions coupled with overall control of obligations. The cost budget process and controls, however, are extended to contractor operations, particularly under the management type contracts.

Fund controls are exercised through the contract itself which, in addition to establishing the fee for the contractor, sets the maximum amount to which the contractor can commit the government during a specified period. These amounts are recorded as obligations on the Commission books. The amount to be covered in the contract is derived in the same manner as Commission budget, i.e., costs plus or minus changes in inventories, outstanding orders and sub-contracts, etc. The responsibility for maintaining such commitments within the limits set under the contract rests with the contractor.

Generally the contract periods do not coincide with the fiscal year and most of them are long-term contracts which are extended annually on an October 1st to September 30th basis. However, budgets and financial plans for each contractor are developed for the fiscal year. The funding of the contract extending beyond the fiscal year is carried as "Goods and Services on order" in budgeting and accounting.

In addition to the limit on the amount to be committed, the contractor operates under financial plans for each fiscal year, similar to those outlined above for A.E.C. offices. In fact the latter are, for the most part, a consolidation of the plans for contractors operating under the cognizance of that office. These plans set forth cost ceilings by program, etc., and control is maintained by monthly comparisons of actual costs against projections made by the contractor.

While the formal reports submitted for consolidation by the Commission are in terms of costs by activity or function, the contractors do budget and control in terms of cost elements, (labor, materials, burden, etc.), by cost centers (departmental or other organizational units). Upon receipt of program assumptions the con-

tractors set up estimates on the basis of organizations, employment materials, etc., necessary to carry out the program. In most cases these follow industrial type budgets with monthly reporting on the same basis, for review by management at the contractor level. Broadly speaking, the review and control of contractors' operations in terms of "elements of cost" and "cost centers" is limited to the contractors' own management staff and that of the Commission's office immediately responsible for supervision of the contract. However, while the main line basic data in budgets and cost reports are in terms of functional or activity costs, budgets supplemental data relating to contractor staffing major subcontracts, etc., is submitted and considered in the process.

The financial plans and fiscal controls for construction, which is funded under a no year appropriation, are based primarily on obligations. This is due to the fact that the total cost of a given project and funds available for placing contracts is more significant than the

costs incurred during any given fiscal period. However, here again, allotments are held to a single amount for the office for the year. The financial plan sets forth the details by project. There is also a detailed reporting of costs by project which in conjunction with engineering reports provides a basis for evaluating progress and the status of funds month by month.

In summary, the system of the Atomic Energy Commission constitutes a "marriage" of traditional governmental-type fiscal accounting and controls with industrial-type budgeting and budgetary controls. By placing major emphasis of program control and measurement of performance on the basis of costs, management and fiscal officers of the Commission have a far more effective tool. In addition, "fund" accounting and reporting are substantially reduced and accounting and reports, based on purely arbitrary distributions and adjustments, are eliminated. Instead, there is reliance on a system of accounts and reports developed and maintained in accordance with generally accepted accounting principles.

CANAL ZONE AND MILITARY COMPTROLLERS EXCHANGE IDEAS

Lt. Col. A. A. Tisone, USAF Hdqtrs., Caribbean Air Command, Albrook Air Force Base, Canal Zone

An informal association of the Military Comptrollers for the United States Air Force, United States Army, United States Navy, together with the Panama Canal Company Comptrollers, has been organized. Once a month an informal meeting in which some of the personnel assigned to Budget, Accounting, Finance and Auditor participate on an "as required" basis is held.

In the Canal Zone, it is necessary that services and supplies be procured from one service by another. Accordingly, a great number of Cross-Service Agreements between and among the various services of the Canal Zone and the Panama Canal Company are in being. In order to foster a friendly relationship and an understanding of each other's problems, the DCS/Comptroller, Caribbean Air Command, was instrumental in initiating the informal comptroller group meetings. One service or organization plays host to the other services at a luncheon, at which time, common problems regarding servicing and support

agreements are presented by the host. Lively discussions are generated by the participants and a free interchange of ideas, methods and procedures in the fields of Budget, Accounting, Finance and Auditing are exchanged. It has been our experience to date that because of these lively and informal sessions, a great deal of mutual concern and appreciation of the other fellow's problems has been gained. Many times in the past, because of these associations, it has been possible by the means of a simple telephone call to resolve problems applicable to two or more services in the Canal Zone, rather than initiating reams of correspondence among the various service organizations and the Panama Canal Company. This procedure, although not new, is heartily recommended to other comptrollers in other places of the world where more than one military service and/or governmental agency are present and where the organizations are dependent upon each other for the acquisition of goods and services.

Correction:

Under "Special Interest" of the June 1959 issue, Major General H. N. Toftoy's name was incorrectly spelled as Loftoy. The printer regrets the error.

RUBRIC BUDGET COST RATIOS A New Navy Industrial Funds Concept

Mr. L. J. Richards, CPA-Comptrollers Office, U. S. Naval Gun Factory

ABOUT THE AUTHOR:

Mr. L. J. Richards, CPA, author of the article A NEW NIF CONCEPT which we publish in this issue, formerly was Comptroller of the World Health Organization of the United Nations. In connection with his studies on financial control mechanics Mr. Richards has translated "Les Méthodes du Contrôle dans les Entreprises," a book by Pierre Wolff, a French Management Engineer residing in Paris. The English translation will soon be published under the title "A New Theory of Business Control."

The introduction of electronic equipment in accounting offices raises problems of balance and control, the solution of which will obviously require new approaches. We feel that this article makes a contribution in connection with the Industrial Fund now in use in many military establishments.

DISCUSSION:

This new concept takes issue with the NIF experts who have a one-ball-of wax theory of control — who maintain that the NIF double entry, business-like kind of accounting, ipso facto, carries into the Naval activity the management controls and the accounting techniques of private industry.

The new concept maintains that economy in use of tax money is predicated upon (1) expanded use of data processing capability, and (2) upon a budget cost structure of control.

Under the National Security Act of 1947, as Amended, there have been established 28 Naval Industrial Funds. The Seventh Annual Report submitted under Section 405 of Title IV of this Act gives dates of the establishment of double entry equity accounting at each activity. This Report indicates that the 147 annual financial reports, drawn up by the 28 NIF activities, have all been of the balance sheet type, plus operating profit and loss statements similar to private corporate business reporting.

As of 30 June 1958 approximately \$318.0 million of tax money had been invested in the Industrial Fund plan of operation. Sales in fiscal year 1958 at NIF activities amounted to approximately \$1,475.0 million. All sales represent charges to appropriations held by the Army, Navy, and Air Force and other government agencies, that is against tax money, except two-tenths of one percent of the sales which were billed against non-tax money.

These Funds have been established under the assumption that management controls and accounting techniques of private industry can be transferred to NIF activities to achieve efficient operations.

In private business the double entry system of bookkeeping is exceedingly useful in identifying losses induced by high or increasing costs. The specific spots of high costs are identified for the businessman by his customer's purchasing agent when he says, "Your price is too high. I can buy cheaper from somebody else."

The customers of NIF are customers with

appropriated cash to spend. The comparable cost control on NIF business operations lies in the hands of the customers' allotment managers who bear the restrictions of Section 3679 of the Revised Statutes. Thus, the allotment manager substitutes for the purchasing agent.

The private business man who faces sink-or-swim competition is told when and where his prices fail to meet the prices of his competitors, that is when and where his costs are too high for the market. If he stays in the market he will cut his costs by using more efficient methods of manufacture or by a redesign of his product to get into another price class. Or, he will discontinue making the article which he cannot sell because of his high costs. His double entry bookkeeping will guide him in the search for less costly operations.

The Price/Cost ratio, king in private business, has no important impact on NIF operations. NIF costs can increase — overhead costs can go up, and NIF business will go right on. It is undisturbed by fluctuations in market prices. NIF business is largely fenced in and protected from the financial controls imposed impersonally by open market pricing.

Naval activities operating directly under the limitations of the allotment have a financial control based on money-limit stoppers. There is a zestful challenge up and down the management line where the accounts furnish money limitations for specific accomplishments. "We did the job within the funds allotted" is often the proud boast in such activities. "We did the operation. We have funds left over! We can return money to the bureau!"

With NIF there is no comparable excitement or zest in accomplishment: "The fund turns over and over. We bill our costs. We get our costs back . . ." The responsibility of control is pushed back to the managers of the allotted monies who have no administrative responsibilities within the NIF organization.

Thus any emphasis on improved financial control by a NIF activity over an activity managed by the conventional allotment system is incomprehensible if attributed to the transfer of benefits of an accounting system that was

developed in the competitive market situation of private business. The financial controls imposed by Section 3679 do not carry through to NIF's costs. These can and do mount up and up. Efficient operations are not achieved. Under NIF, costs are billed to the customers who pay out tax money. There can be no profit differential. Hence, it would seem that the related Profit and Loss Statement, or any similar version of it, is not significant control-wise. Other controls are necessary.

NIF Bookkeeping and Data Processing

A paraphrase of William Shakespeare is pertinent at this juncture. "To do or not to do... that is the question. Whether with oceans of data to process 'tis nobler in the

and its attendant problems are as new as EDPS — as new as the processing of business transactions by electronic equipment. In a sentence, the problem of data balance is as old as Pacioli and as new as EDPS.

The raw accounting items of documents are processed in any systematic accounting treatment either by hand, by mechanical or by electronic equipment. In a hand system the debit and credit balancing of data is accomplished by hand work. In a mechanical EAM system, the debit and credit balance should be accomplished mechanically.

With data processing accomplished by electronic equipment, the essential balance of debits and credits should be incorporated in the program and in the system of checks and

SCHEMATIC A

Balanced Control Data In the Double Entry Bookkeeping System

BASIC DATA		PROCESSED DATA				
Checks in Numerical Sequence	Amounts of the Individual Checks	The distribution of each check amount to Expense, Cost, Assets, Accounts				
		Account 1	Account 2	Account 3	Account 4	Debits
	Credits	Debits	Debits	Debits	Debits	Debits

mind to abide outrageous bookkeeping or to reconcile rival claims and to wed the upstart data processing with the ancient and noble art of business bookkeeping."

The wedded status of data processing and NIF double entry bookkeeping is yet to be solemnized. Yet the two creatures often live together in unhappy union. Shall document-control and data-balance, required by the bookkeeping art, be impediments between a legal and productive union of these two complementary personalities?

NIF bookkeeping requires two kinds of information — basic data and processed data. Schematic A which follows shows the balance relationship necessary for the double entry NIF bookkeeping system.

Debits and credits must always be in balance regardless of where they are recorded, — whether on the general ledger or on original-entry registers, such as illustrated above.

This equation of control, based on the equality of debits and credits, is as old as double entry bookkeeping. This concept of data balance was first enunciated in the year 1494 by Lucas Pacioli. The following is a paraphrase from his book published in that year: "... arrange all transactions (e.g. documented data of the NIF system) in such a way that the ... debits balance the credits ... and the balance is understandable at a glance."

Furthermore, the concept of data balance

balances built into the circuitry of the equipment. In any event the processing of NIF's documents must obey Pacioli's Law of Balance if there is to be accuracy, timeliness, and integrity.

A small factory manufacturing a line of products (say toys) for the market will have clerks entering the documents on original entry registers similar to Schematic A above. Periodically these will be footed and summarized, and postings will be made to the general ledger accounts. Debits and credits must balance from the entrance into the system and at each stage throughout the accounting system. If not, the clerks will make a search immediately for the mistakes. When errors are made they are corrected at once. Thus the books of the factory are always in balance. Debits equal credits and subsidiary accounts add up to the control account totals — if not, the head bookkeeper is fired. Accurate balanced-bookkeeping is expected. It is demanded and obtained. The owner, his auditor, his banker — all conspire to obtain good bookkeeping.

The first requisite of any cost control system is a bookkeeping system that gets all the costs in. In a small business this can be done by a hand-maintained bookkeeping system.

By reason of volume of data, basic bookkeeping must be done mechanically and automatically at a NIF activity.

As terms of reference, Pacioli's words

debit and credit originally had significance in commercial practice. However, today debit means simply the left hand side of a sheet of paper. Credit means the right hand side of the same sheet of paper which is called an "account." The terms debit and credit now have no objective value.

Furthermore the terms are inapplicable to data processing. A machine does not debit, neither does it credit. It lists. But what kind of a listing? What is the listing for? And how can it be used for cost control?

NIF bookkeeping requires a balance between its two parts, called debit and credit. But the data processing machine does not distinguish between the sides of a sheet of paper. There is only one side, the "Out" side on which data listings are made, or, there is the sensitized side of a magnetic tape or drum.

Data Processing and Control

The volume of data to be processed makes the job of data balance a system job to be done automatically within the resources of the data processing system. Furthermore the Naval Industrial Handbook NAVEXOS P-1902 specifies an integrated and balanced system of data processing.

Good bookkeeping starts with good data processing. Schematic B which follows illustrates the relationship between bookkeeping and data processing in one control area of NIF bookkeeping, namely, factory work in process.

In the mechanical or electronic processing of data there must be a balance of the basic data runs against the processed runs of the same data.

From the point of view of bookkeeping, the primary usefulness of the basic tabulations is to develop the control total for the processed

tabulations. In the illustration furnished by Schematic B the control total is the figure \$2,030,000 which is the total of the basic tabulations. The processed tabulations must add up to the same figure before the information can be posted onto the double entry NIF bookkeeping records. The EAM installations at NIF activities must provide the listings and analyses of data required for such a balance if there is to be control. It is not sufficient as in allotment accounting to list one side of the data. The basic data must be resorted before any changes are made and the processed data listings run immediately. With EDPS the basic data and the processed data can be run simultaneously.

The Rubric Budget/Cost Ratios

In the private business corporation, costs of doing business are controlled by the Price/Cost ratio. The price level furnishes a ceiling on costs.

In the public-money NIF corporation the price control on cost is inoperative. NIF's customers are managers of tax-money allotments who are primarily interested in the control of their own Fund operations so as to avoid the penalties of Section 3679 of the Revised Statutes for overspending public funds.

In default of Price/Cost controls . . . in default of Section 3679 control, other cost controls within NIF are needed to discourage run-away costs. A structure of Budget/Cost rubrics can accomplish this. Schematic C shows the form.

The Rubric Data System shown on the Schematic, comprises four discrete phases: Phase A, BASIC DATA; Phase B, PROCESSED DATA; Phase C, RUBRIC DATA; and Phase D,

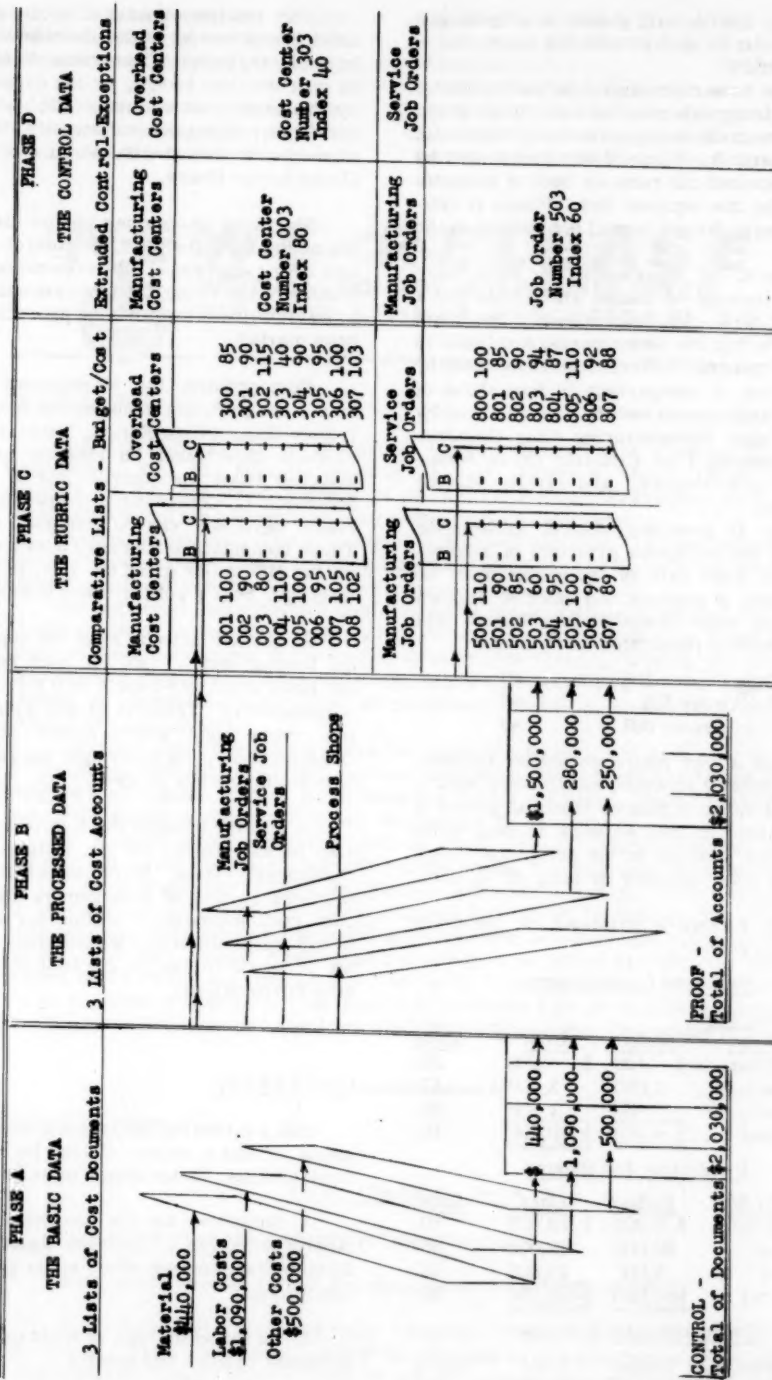
SCHEMATIC B

Work-In-Process Control Area Data Trial Balance

<u>Account Detail</u>	<u>Data Totals</u>	<u>DEBIT</u>	<u>CREDIT</u>
BASIC TABULATIONS			
Material Issues	\$ 440,000	\$ -	\$ 440,000
Accrued Labor Costs	1,090,000	-	1,090,000
Accrued Other Costs	500,000	-	500,000
CONTROL TOTAL	\$2,030,000		
 MINUS			
PROCESSED TABULATIONS			
Manufacture Job Orders	\$1,500,000	1,500,000	-
Service Job Orders	280,000	280,000	-
Process Shops	250,000	250,000	-
Total to Subtract	\$2,030,000		
 PROOF OF BALANCE	 ZERO	 \$2,030,000	 \$2,030,000

SCHEMATIC C

THE RUBRIC DATA SYSTEM



CONTROL DATA. All phases are developed automatically by data processing equipment — EAM or EDPE.

Phase A is represented on the schematic by three basic tab runs, or lists of document summaries in the manner previously illustrated by Schematic A. Phase B is represented by three processed tab runs, or lists of accounts affected by the inputted data. Phase B represents basic data as sorted for posting to the accounts.

Phase C is represented by four comparative listings of budget allocations for a period of time, say one month. The costs accrued during the same period are listed in a parallel column. Differences are extended by the machine. A comparison is thus shown of the amounts budgeted and the costs accrued by (1) individual Manufacturing Cost Centers; (2) by Overhead Cost Centers; (3) by Manufacturing Job Orders; and (4) by Service Job Orders.

Phase D provides control information based on the exception principle of administration — Take care of the exceptional; do this in order of urgency. An index of urgency is provided under Phase D of the Rubric Data System which is illustrated as follows:

Cost Center 303	40
Job Order 503	60
Cost Center 003	80

The ratios shown above should be approximately 100 for a costwise satisfactory operation. If a range of plus or minus 15 points is allowed, then the cost situation in each of the above three centers is not acceptable since the index must register at least 85 in each case.

There follows a print-out of the three illustrative cases.

Overhead Cost Centers

Cost Center 303

Description	Budget	Cost	Ratio
Material Cost . . .	\$ 100	\$ 500	20
Labor Cost	3,000	8,000	37
Other Cost	900	1,500	60
Total Cost	<u>\$ 4,000</u>	<u>\$ 10,000</u>	40

Production Job Orders

Job Order 503	Budget	Cost	Ratio
Material Cost . . .	\$ 5,000	\$ 10,000	50
Labor Cost	50,000	75,000	66
Other Cost	5,000	15,000	33
Total Cost	<u>\$60,000</u>	<u>\$100,000</u>	60

Production Cost Centers

Cost Center 003	Budget	Cost	Ratio
Material Cost . . .	\$10,000	\$ 20,000	50
Labor Cost	60,000	70,000	85
Other Cost	10,000	10,000	100
Total Cost	<u>\$80,000</u>	<u>\$100,000</u>	80

The machine speaks directly from the data. The print-out of the above information is keyed by the Budget/Cost ratios. A comparison of cost and the budget, or the expected cost, by the basic cost elements (Labor, Material, and Other) is made automatically. Other cost elements can be added if desired. For example, Direct Labor Hours.

Thus, the processing of cost data can be organized for a Budget/Cost control that bites into every segment of NIF's operation after the fashion of the Price/Cost determinators of the private business corporation producing for the open market.

Furthermore, the Management Bureaus have a magnificent management means in the Rubric Budget/Cost Ratios. Much control and intimate directional information can be abstracted from the Rubric Data of Phase C, Schematic C. Consolidated comparative control ratios obviously can be computed by EDPS. These computations can save a lot of tax money as the NIF mills grind on. For, in the poet's language, Thar's gold in "them Rubrical Hills."

At the NIF activity level the supervisors, the leading-men . . . all the men responsible for basic costs of Phase A will feel their cost responsibility. Tendrils of this system reach into every nook, every cranny of the NIF Organization . . . to every spot where any dime of basic tax money is spent.

A similar setup of the Rubric System can also be established for the billings to NIF's customers. Thus, there would truly be a balanced system of management controls. A cost consciousness, a feeling for enterprise in NIF corporate activities would develop similar in spirit to that in the best private business corporations.

CONCLUSION.

NIF Accounting needs new concepts, a new spirit . . . and a *raison d'être*. Its body needs resuscitation. These things must happen:

1. Substitute for the concept Price/Cost control effective in business operations, the Budget/Cost control effective in government operations.
2. Increase the use of EAM or EDPS for document balance and control.
3. Make positive account reconciliations. Require the immediate identification of all open-item or not-processed documents so that

such documents can be found and the processing completed before the maw of files causes the documents to disappear or be very hard to find.

4. Detail the commitments to the customers by cost element including Labor by class, Overhead by kind and rates, Materials by kind

and source, Services by type and rates, etc.

5. Make monthly billings of accrued costs to all customers.

The Rubric System discussed here is the one NIF improvement most urgently needed. Involved here is a program of increased usefulness of data processing capability.

NEWS RELEASE



**INDUSTRIAL COLLEGE of the ARMED FORCES
FORT LESLEY J. McNAIR, WASHINGTON 25, D.C.**

To The Editor:

WASHINGTON, D. C. — Walter T. Cooper, Balah Farm, Fauquier County, Gainesville, Va., was recently cited by Lt. Gen. George W. Mundy, USAF, Commandant of the Industrial College of the Armed Forces, Washington, D. C., for having completed the college's correspondence course with honors.

The course entitled "The Economics of National Security," is based on the 10-month resident course conducted for selected senior officers of the military services as well as officials of the civilian governmental agencies.

The Industrial College which operates under the immediate control of the Joint Chiefs of Staff, is the only senior joint service college which devotes itself to the study of the geo-economic factors of national and international affairs. Its mission is to educate its students in the economic, political, scientific, industrial and social aspects of national security under all conditions; normalcy, economic stress, and limited or total conflict.

The correspondence course which is available without cost to qualified civilians in business, industry, and the various professions as well as to officers of the reserve and regular forces, takes about one year to complete. Interested persons may apply to the Commandant, ICAF, Washington 25, D. C.

Mr. Cooper is presently employed as Chief, Mutual Security Division, Office Director of Army Budget, Comptroller of the Army, The Pentagon, Washington 25, D. C. He is a member of the Army Finance Association and the American Society of Military Comptrollers. He attended Drexel Institute of Technology from 1924 to 1928 studying Commercial Engineering, Accounting and Business Administration. He also attended George Washington University Law School at night, and was admitted to the Bar of the District Court of the U. S. for the District of Columbia and the U. S. Court of Appeals for the District of Columbia Circuit in 1938. He received the degree of Bachelor of Laws from The George Washington University in 1940.



Editor's Comment !!

THE CHAINS AGAIN

Remember when chain letters were all the rage?

Well, every once in a while the chain letter idea comes to life.

The other day a friend of mine received a chain letter sent him by a friend. It read: "This chain was started in the hope of bringing happiness to all tired businessmen. Unlike most chains, it doesn't require money. Simply send a copy of this to five male friends, then bundle up your wife and send her to the fellow whose name heads the list. When your name reaches the top of the list, you will receive 15,186 women and some should be dandies. Have faith. Don't break the chain. One man broke it and got his wife back."

COST CONTROL IN THE FEDERAL GOVERNMENT

Submitted by Marvin B. Hopkins*

Chief Cost Analysis Branch - Budget Division - USCG Headquarters

* Author credits for source of material, article prepared by The Committee on Governmental Accounting, District of Columbia Institute of Certified Public Accountants, August 1958, as follows:

Winson Jones, Committee Chairman
Marvin B. Hopkins, Subcommittee Chairman
Harry E. Howell John Payne
Oscar Olson Richard R. Reidenbach

I. INTRODUCTION

For a number of years prior to the passage of Public Law 863 in 1956, there was much discussion and controversy both in and out of the Federal government concerning the merit of the two principal provisions of the legislation, namely (1) cost-based budgeting and (2) accrual accounting. Progress has subsequently been made toward implementing the provisions of Public Law 863 (the budget for the fiscal year 1959 included 98 cost-type presentations out of a total of more than 500 current appropriations); however, the overall program to institute the new procedures has not advanced as rapidly as warranted. Even more important, there is some indication that the legislative review of agency budget presentations is not giving proper emphasis to and agency management is not deriving the fullest advantages from the improved reporting systems now available in a number of government operations.

Progress toward securing the significant advantages to be derived from the application of modern control techniques to governmental operations has not been as rapid as it might have been. There is an urgent need for achieving better understanding on the part of departmental officials and members of the Congress of the substantial advantages to be derived from such techniques. In this regard, it should be clearly understood that the primary emphasis should be given to employing such techniques toward achieving more effective managerial control over operations as opposed to merely changing the bookkeeping procedures.

II. BACKGROUND OF ACCOUNTING AND BUDGETING IN THE FEDERAL GOVERNMENT

To comprehend the present need for and advantages to be obtained from cost budgeting

and accrual accounting, it is first necessary to understand the historical role of accounting in the Federal government and to recognize the tremendous financial and budgetary control problems now associated with governmental operations.

Financial control problems in the Federal government were of a minor nature for the first one hundred fifty years following the nation's founding. Due to the very limited expenditures required, simple fund procedures offered a reasonably adequate basis of accounting. With the growth of the nation, budget and revenue problems at times became acute, especially in periods of war; however, it was not until 1913 that the first major revenue measure, the Federal income tax law, was enacted. Even though World War I necessitated rather heavy Federal expenditures, the financial problems of the government were still rather limited as late as 1930. At that time, the Federal debt was only \$16.2 billion and annual Federal expenditures only \$3.4 billion.

Prior to 1921, no agency of the government was charged with the responsibility of preparing anything approaching an organized budget for the Federal government as a whole. Under the fiscal procedures then in existence, each agency prepared an annual estimate of funds required. The agency estimates were then brought together in a "book of estimates" by the Secretary of the Treasury and presented directly to the House of Representatives. The office of the President had no facilities nor staff for controlling or directing the financial administration of the government. The Budgeting and Accounting Act, 1921, provided for the first time for a national budget system and required the President to submit to Congress an annual budget of estimated receipts and expenditures.

The advent of counter-depression measures during the 1930's and the later cost of World War II were the two contributing factors

most responsible for the present day structure of the Federal budget as well as for the size of the national debt. Since the Congress has the primary responsibility for enacting revenue measures and for approving expenditure programs, it is only natural that the development of accounting and budgeting in the government must be closely related to wishes of that body.

Very few governmental programs are considered to be self-supporting. That is, most governmental programs can be termed expenditure programs, the financing of which depends upon expenditure authority approved by the Congress. The actual funds for financing such programs come generally from Federal taxes or Federal borrowing. For the most part, the taxes assessed do not have a direct relationship to the benefits to be received or service provided. Stating it another way, the individuals or sectors of the economy deriving direct benefits from an activity, such as the agricultural subsidy program, do not pay special taxes or assessments directly related to the benefits received. (A major exception to this is the postal service.)

In the process of appropriating funds for an individual governmental agency or program, Congressional review has been limited in effectiveness due to many factors including:

- (1) The nature of our political-economic system has generally contributed to strong support for expenditure programs, while the financing of such programs has often been considered quite another matter.

- (2) The historical system of governmental accounting has more often obscured rather than revealed costs of operation with respect to specific programs.

- (3) The budget process of appropriating funds on an obligation basis has not involved relating results obtained with funds expended or costs incurred in any one year. This has resulted from the fact that, under the obligation system, the annual carry-over appropriations of prior years, and inventories and other resources on hand at the beginning of a fiscal year have not been accorded the consideration warranted in approving new spending authority. Under the system followed, it has been possible for the Congress to cut the budget of an agency, yet find that the agency subsequently spent more money than was originally forecast.

The shortcomings of the obligation system of Federal budgeting is best illustrated by citing the relationship of the annual budget to total governmental resources. As was mentioned previously, the budget presented to Congress annually is merely a proposal for new spending authority. For the most part, the planned use of assets on hand as well as remaining unexpended appropriations of prior years does not

require positive action on the part of the Congress incident to reviewing and approving the new budget. The significance of this type of review is highlighted by citing the dollar amounts of these three factors for a recent period:

Federal budget — 1958	
fiscal year	\$ 73.3 billion
Appropriations and other obligating authority carried forward from prior years .	\$ 70.0 billion
Governmental assets on hand (per physical property inventory June 30, 1956)	
Real property	\$ 56.1 billion
Personal property —	
inventories	65.4 billion
Personal property —	
other assets	113.5 billion
	\$235.0 billion

In reviewing the 1958 budget requests, the Congress largely restricted its attention to the \$73.3 billion of new spending authority, giving little attention to the control and use of inventories and other assets assigned to the various agencies and departments, as well as the carry-over appropriations from prior years. Agency personnel have likewise largely limited their concern and attention to the spending authority being sought. The net result of this approach has been to place controls in government operations at the point of purchase or order placement with little or no subsequent control over the effective utilization of resources or assets acquired. The absurdity of this approach is illustrated by relating its application to a large industrial corporation. It would be tantamount to such a corporation concerning itself only with the process of purchasing additional materials and supplies, with little or no consideration given to the proper application and utilization of inventories, plant, equipment and other assets already on hand.

It is evident that the attainment of more effective governmental operations would be considerably enhanced by the introduction and use of a system of budgeting and accounting that is concerned with total resources and costs applied, and not just to the assets and costs covered by the current year's budget for new spending authority. Surely the control over government owned real and personal property aggregating \$235 billion must be considered the very minimum requirement of any adequate system of financial administration.

III. ACCRUAL ACCOUNTING SYSTEM

One of the basic postulates of modern accounting is that in order to properly reflect operating results (revenue and expense for a given period) and to adequately control assets

and reflect financial position, all significant transactions must be recorded. For many years, private enterprise has recognized this basic principle and has given effect to it through the use of "accrual accounting" methods. In contrast, government agencies generally have followed the practice of controlling funds through a system of budgetary accounts which involve recording transactions largely at the time orders for goods or services are placed. Accrual accounting provides for the recording of revenue as earned and reflecting expenses at the time the goods and services are consumed or placed into service regardless of when orders are placed or payment is made.

The desirability of further development of accrual accounting in the Federal government was recognized in Public Law 863 by the provision that each executive agency shall maintain accounts on an accrual basis. Some of the essential data which can be developed from an accrual accounting system are:

- a. Cost accounting data whereby the cost of performance can be obtained. This makes it possible to relate costs incurred to the amount of work produced. It also provides data for comparisons with standards of other agencies or of the same agency for prior periods. Only through the use of cost data as a means of control can financial management reach its maximum potential.
- b. An adequate basis for safeguarding and controlling resources.
- c. Accounting support for budget estimates. Adequate provision can be made for the preparation of analyses which will give a full disclosure of operations. This will give reviewing authorities a basis for evaluating and understanding program requests.
- d. Financial reports stated in meaningful terms and related to the Factors to be considered in designing an accrual accounting system are set forth in the ensuing paragraphs of this part.

A. Type of System Most Useful

In order to attain maximum usefulness, an accrual accounting system must be tailored to each agency's management and accounting requirements. There can be no standard system developed which will meet all of the needs of varied types of operations. In designing a system, consideration must be given to programming, alignment of responsibilities, management concepts, and objectives. Because management officials are the most familiar with these considerations and will be the principal users of the data provided, it is essential to obtain their advice and cooperation if the system instituted is to be useful.

B. System Must Provide a Measure of Costs

The prime objective of any effective accounting system is that it should facilitate

managerial control of operations. To control costs there must be a unit of measurement which will permit an objective evaluation and comparison of results or work produced. In most government operations, units of measurement or indicators can be developed for programs, missions, projects and functions. Obviously, certain operations such as government industrial plants lend themselves much more readily to work load measurement than would be the case for regulatory or administrative agencies. As a practical matter, the operations of many government agencies would involve cost measurement factors ranging from perhaps standard costs to limited overall economic indicators for the various sub-organizational units. However constituted, the work load measurement factors should be related to the funding structure and the accounting system should be compatible with the overall budgetary structure.

Programs, missions and functions alone do not reflect desirable cost objectives unless they are related to areas of management responsibility. The accounting system should therefore reflect on a consumed basis the cost of programs, missions and functions for the various areas of management responsibility. This is especially important in a government operation where some of the profit incentives for control are missing. The things to do, therefore, in establishing an accounting system are (1) identify the major functions or missions (2) divide these functions or missions into activities and (3) establish such breakdown of activities as are needed for proper management. This should provide the framework for the expenditure aspects of the budgeting, accounting and reporting systems.

An ideal accounting and reporting system should provide cost data at the lowest level of operations measured by the programs, missions, functions or product. Successively at each higher level of management the data should be summarized so that sufficient data is provided for exercising control in keeping with responsibility assigned. For top level management, overall costs of the missions, functions or product should be presented in sufficient detail to reveal the performance of each principal area of responsibility.

C. System Should be Compatible with the Budget

Costs derived from the accounting system measure performance, whereas the budget consists of a predetermined financial plan. Both are essential and inseparable management devices for controlling operations. Both are interdependent and so intermeshed in objectives that it is only elementary that both should be compatible in structure. The accounting system should provide the means of measuring progress in terms of budget forecasts and also the means for making comparisons of performance with planned objectives. This can only

be attained where budgeting and accounting are fully coordinated and integrated.

The accounting system should support the budget and financial data for budgetary and accounting purposes should be presented in the same classifications or units of measurement. That is, each should present costs in terms of programs, missions and functions with as much detail as is necessary for proper guidance.

D. System Should Not be too Detailed

No attempt should be made to design an accounting system to answer every conceivable management need for cost detail. To do this would make the system so cumbersome and the cost of operation so exorbitant as to offset all benefits. One time need for detailed information should be met by analysis or sampling of underlying data and not be a routine built into the system. By having management officials participate in the initial development of the system, they will gain a better appreciation of the statistical and financial data available, and requests for special information will be correspondingly reduced.

IV. BUDGETING IN THE FEDERAL GOVERNMENT

Until fairly recent years, the Federal government's annual budget consisted of estimates of obligations to be incurred during the year, analyzed by so-called expenditure objects, such as personal services, supplies, equipment, etc. The undue attention directed to the objects of expenditure often resulted in overlooking the size and need for the programs themselves. Let us look at this method of budgetary presentation and see what it had to offer. The Appropriation Committees of the Congress had only limited information on which to evaluate the objectives to be obtained other than the general mission of the government unit concerned. It was therefore difficult to determine the proper amount of funds required for a given program. The only basis available to test the reasonableness of such a budget was to make a comparison with prior years' budgets. However, there was no way of assuring that the prior years' budgets were reasonable.

After funds were appropriated by the Congress, the agencies set up controls mainly to assure that obligations were not made in excess of available funds. However, little or no distinction was made between the purchase of material and supplies which were to be consumed immediately and those which would be available for future use or delivered in future years. This method of budget preparation resulted in serious control deficiencies and made it very difficult for management to effectively discharge its responsibilities.

Budgeting is an instrument of management on which a price tag can be placed and a meas-

ure of accomplishment can be determined. Accountants should render every possible assistance and be responsible for the correctness of the presentation and accounting treatment of financial data underlying the budget. However, the primary responsibility for formulation of a budget must rest with management. Those who are responsible for the accomplishment of the operating program must participate in the preparation of the related financial plan.

V. THE COST-BASED BUDGET

The major weakness of the Federal budgetary system has been the failure to develop the budgetary processes to a point where they could be useful for management control and planning purposes. The advent of the cost-based budget has provided a means for overcoming this weakness.

A cost-based budget is an operating plan which has been developed and stated in terms of costs to be applied during the period. Such a budget should be fully compatible and integrated with the accounting system. One of the functions of a budget is to provide a means for evaluating what has been done, as well as to project future results. It must be a specific and understandable plan of action stated in terms of dollars. A budget which does not provide for comparison between planned and actual results is of little value to management and reviewing authorities.

A. Preparation of a Cost-Based Budget

For the purpose of describing the preparation of a cost-based budget, an agency request for regular operating funds will be used. It will be assumed that an adequate accounting system has been provided with activity or program classifications consistent with the proposed budget presentation.

The first step in preparing a cost-based budget involves a determination of the work load or quantity of products or services to be provided or produced by the agency for the budget year. This would be equivalent to a commercial organization projecting volume requirements on the basis of sales forecasts. It is of the utmost importance that the level of operations forecast be carefully determined and that the final work load figures used in the budget be firmly supported.

Once the program and level of operations have been established, the related work units or other work measurement statistics should be projected. Where the governmental unit produces an end product, the various expense or cost classifications will be determined simply by multiplying the bill of materials, labor and overhead schedule by the units to be manufactured. Where a service is rendered (as opposed to a manufactured product), a comparable work unit will have to be determined and related to the volume of services underlying the budget. In

short, regardless of the mission or work program at hand, some meaningful measurement unit stated in terms of cost should be used to project expense classifications to be included in the budget.

B. Resources Available for Application to Cost

In determining the method of financing costs, the resources which are available for application to costs (other than appropriations) must be carefully estimated as they will affect the amount of appropriation required. The common types of resources available for carry-over from year to year are (1) inventories (2) undelivered orders (3) advances on contracts and (4) work in process. It is just as important to account for and utilize resources which have been acquired from appropriations of other years as it is to plan the use of current appropriations.

Inventories are one of the resources carried over and are common to most agencies. This resource poses few problems in agencies in which the inventory level remains relatively constant from year to year. However, in certain agencies, inventories on hand run into many millions of dollars and will vary greatly depending upon delivery date of long lead time items, issues for consumption, etc. This may be further complicated by the geographical location of inventories in this country and abroad. Under these circumstances very careful planning is required. Such plans must include detailed information as to the programs being planned, long lead time items to be ordered and expected delivery dates. Changes in level of operations may also entail changes in inventory level.

Another major resource is undelivered orders, i.e., contracts and orders outstanding at the year end for which delivery of material or services will be made in future fiscal years. In agencies where the amount of undelivered orders is relatively constant, few problems are encountered. However, in agencies where programs are constantly changing and large undelivered orders for long lead time items are the rule rather than the exception, the problem becomes acute. Here again it is necessary to have intimate knowledge of the programs to be carried out if an intelligent estimate is to be made. An analysis of program plans must be made and such things as delivery of materials ordered, contract completion dates, etc., must be carefully evaluated.

Other forms of resources, such as advances, work in process, and other miscellaneous resources can be evaluated in much the same manner as inventories and undelivered orders. The budgeting of resources to be carried over is one of the more important aspects of the cost-based budget and admittedly it represents an area where considerable variance between estimates and actual is possible. How-

ever, the knowledge gained through the type of analysis and evaluation required will be a valuable aid to management in planning and discharging its responsibilities.

C. Problem Areas in Cost-Based Budgeting

We would like to discuss some of the problem areas which are encountered in the preparation of cost-based budgets. Some of these areas require Congressional action to resolve, some can be resolved by the Bureau of the Budget and other cognizant agencies, and some can be resolved through coordinated effort within the various agencies.

TIME ELEMENT — In order to meet required deadlines, some agencies begin the preparation of a budget approximately eighteen months prior to the beginning of the budget year. This introduces two basic areas in which difficulties may be encountered and must be resolved. (1) It becomes imperative to establish long range plans relating to the expected work load level; (2) in order to place a dollar amount on the long range plan, unit costs, prices and related factors must also be projected. However, for the initial stage of the budget preparation the current fiscal year has not ended and actual current costs are not available. For some activities it may be possible to employ standard costs or other predetermined base cost figures. It may be that costs for the latest calendar year or for the latest four quarters can be used provided that unusual or abnormal factors affecting such costs are properly excluded. Before presentation of the budget in its final stage, costs should be reviewed and compared with costs used as a basis for preparation of the budget in its initial stage. If this review reveals major differences adequate investigation should be made and adjustments incorporated in the budget where warranted.

BASE AND PROGRAM CHANGES — Under the obligation basis of budgeting, it generally was not possible to relate funds requested with work to be performed in the budget year. A cost-based budget automatically provides such information along with the necessary controls governing new purchase commitments. One of the historical methods of appraising an agency budget was to compare the funds requested for the budget year with the funds authorized for the prior year. Under the cost-based budget, this comparison would entail reviewing the resources on hand together with the costs to be incurred for the two years. Perhaps more important, the program, the work load and the operating level forecast must also be scrutinized and properly considered. Estimates for the budget year and the current year together with actual cost figures for the prior fiscal year should be shown. This affords an opportunity to re-cast current year cost estimates and changes in resources carried over in order to reflect any necessary changes in cost or change

in resource estimates made necessary by changes in the operating plan.

Program changes consist of new activities or expanded activities which result in increased costs or increase in selected resources or a combination of both. An effective cost-based budget consists of costs and changes in selected resources and in determining what constitutes a program change the two elements must be considered as a whole. For example, let us assume that the cost level will remain substantially the same for the budget year and current year. However, in the budget year the inventory level will be decreased and thereby less funds will be required. No program change has occurred. The costs remain the same and the amount of budgeted resources on hand decreases.

D. Justification in Terms of Cost

All changes in the level of operations should be justified on a cost basis. When it becomes necessary or desirable to reduce an appropriation request, it can be done in an orderly manner by determining the programs which must be cancelled or curtailed. The costs covering such programs should be identified if possible and deducted from the estimated costs included in the budget. In discussing the yearly budget and presenting justification to the Bureau of the Budget and the Congress, such discussions should be made in the following order:

- (1) Total costs to be incurred
- (2) Changes in inventories and other resources on hand
- (3) Changes in unfilled orders and contracts
- (4) Appropriation requirements

This is in consonance with the recommendations of the Hoover Commission and the hearings leading to the passage of Public Law 863. Controlling and accounting for resources on hand is just as important and should be so considered, as controlling and accounting for appropriated funds.

E. Reimbursable Programs

The amount of work performed by government agencies for other agencies and departments on a reimbursable basis is increasing. There are two distinct problems posed by such activities, namely (1) the justification of the need for the service by the procuring agency and (2) the substantiation of the costs incurred by the service agency. Where it is feasible to maintain records specifically identifying the costs related to the service or product provided, few problems are encountered with respect to the latter. However, a large number of reimbursable programs must of necessity be carried on concurrently with an agency's regular operating program. In such cases, it may not be practicable to attempt to segregate each element of cost applicable to the reim-

bursable program. In lieu thereof, the amount of the reimbursement required may be computed by statistical sampling techniques or determined by making an overall estimate of direct and related indirect costs.

In the budget of the procuring agency, adequate justification should be furnished supporting the level of the service to be procured. Moreover, the budget review should include an evaluation of the economic desirability of securing such services from alternative sources outside the government. The budget of the service agency should correspondingly provide adequate substantiation for the costs to be incurred relative to furnishing such services. If such costs are not budgeted and justified by the service agency, there is a good possibility that no meaningful justification will be supplied. It is recognized that in some instances it will not be practicable for the service agency to attempt to budget work to be performed for other government units, particularly where special non-recurring projects are involved.

F. Donations

It frequently happens that government agencies have on hand inventory, equipment, etc., for which there is no present need. In certain cases, such assets are transferred on a non-reimbursable basis to other agencies. The material transferred may either be added to inventory or placed directly into use. The accounting system should provide financial information on the value of donations in and out. In building a cost-based budget, donations should be reflected as costs or as changes in resources depending upon whether they are placed in inventory or immediately consumed.

G. Budget Presentation

The format for the budget presentation should be in two parts:

- (1) Determination of requirements in terms of costs. All costs to be incurred should be included and no distinction should be made as to reimbursable programs, costs generated from donated assets, etc.
- (2) Resources available and required. All resources available for application to cost should be shown. This includes changes in inventories and other assets, reimbursements and donations anticipated, and the amount of appropriated funds required. When higher inventories are anticipated for the budget year as compared with the past year, the increase should be justified.

A top summary schedule of a cost-based budget under the present obligation basis of appropriations might appear as follows:

	Past Year	Current Year	Budget Year
PROGRAM BY ACTIVITIES			
Program A	\$ 4,420,000	\$ 4,430,000	\$ 4,432,000
Program B	3,380,000	3,382,000	3,382,000
Program C	3,360,000	3,355,000	3,350,000
Program D	3,350,000	3,360,000	3,365,000
Program E	3,340,000	3,335,000	3,330,000
Program F	3,325,000	3,330,000	3,328,000
Total costs	21,175,000	21,192,000	21,187,000
CAPITAL ASSETS			
	500,000	1,000,000	2,000,000
	21,675,000	22,192,000	23,187,000
DEDUCT UNFUNDED COSTS			
Depreciation	700,000	750,000	800,000
	20,975,000	21,442,000	22,387,000
INCREASE (—DECREASE) IN RESOURCES			
Change in inventories	—100,000	400,000	—250,000
Change in undelivered orders	—300,000	100,000	— 50,000
Resources donated (net)	—200,000	—100,000	—150,000
Reimbursements	—2,000,000	—3,000,000	—1,500,000
	—2,600,000	—2,600,000	—1,950,000
APPROPRIATION REQUIRED	<u>\$18,375,000</u>	<u>\$18,842,000</u>	<u>\$20,437,000</u>

VI. ACCRUED EXPENDITURE APPROPRIATIONS

At this writing consideration is being given to placing governmental appropriations on an "accrued expenditure" basis as opposed to the present obligation basis. This change in the appropriations procedure has the support of the Second Hoover Commission and many other investigative groups that have studied Federal fiscal practices. Under the Hoover Commission proposal, more emphasis in governmental budgeting would be given to the point of actual receipt of merchandise or services.

While the advantages inherent in the accrued expenditure basis of appropriations would seem to merit the support of an informed citizenry, certain facets of the total financial control problem should be borne in mind.

A. It is practicable to employ cost-based budgeting techniques under both the "obligation" and "accrued expenditure" bases of appropriation.

B. The application of the "control" concept to governmental operations is completely feasible within the present framework of the government's fiscal structure, provided that adequate Congressional support and executive direction are present.

In essence, the introduction of modern financial management techniques to governmental operations need not and should not be deferred.

VII. SUMMARY

With the over-all expansion of the country and the probable continuance of international tensions, it appears that demands for government services may continue to increase. Attendant to the anticipated increase in governmental programs, there is every indication that salaries and other costs of operation will probably continue upward. This, together with the mounting national debt, makes it imperative that more effective financial and management control techniques be employed in Federal government operations.

Accounting and budgeting can and should play an increasingly important part in the development of improved and more economical methods. However, an overnight improvement in government operations as a result of changes in financial procedures should not be expected. Changes of a bookkeeping or procedural nature will not alone bring about the needed financial management improvements. Along with these measures, it is essential that both the executive and legislative branches of the government give greater emphasis to the techniques inherent in the "control" philosophy which has contributed so much to the outstanding performance of our system of free enterprise. It would be most unfortunate if the commercial accounting and budgeting procedures were instituted without concurrent emphasis being given to the management control aspects of government operations. While the financial procedural changes will enhance the prospects of attaining more effective operational control, such procedures will not automatically produce the desired results.

FROM
ADDING
MACHINES
TO
GIANT
COMPUTERS...

THERE'S A
BURROUGHS
ANSWER TO
YOUR
ACCOUNTING
AND DATA
PROCESSING
PROBLEMS

Whether your particular need is for a modestly priced adding machine or a giant-capacity electronic computer system—or anything anywhere in between—Burroughs has just the equipment for you.

There's the speedy, colorful Ten Key Adding Machine, for instance, and the small business or branch office P-600 Accounting Machine. Further up the scale, there's the versatile, highly mechanized Sensimatic Accounting Machine and the fast, efficient, yet simple-to-operate F-4200 Electronic Accounting Machine. Or if your data processing needs are myriad and complex, there's the giant capacity, medium-priced 220 Electronic Computer. In fact, today the Burroughs line of figuring and data processing equipment is the most complete and advanced made.

Its purpose in every case: to give you accurate, up-to-the-minute, instantly available figure facts on any or all phases of your business—and save you money, too.

A reliable solution to your specific figuring and data processing problem is as near as our local branch office. Call now to have a Burroughs systems counselor demonstrate that solution.

Burroughs—TM



Burroughs Corporation

"NEW DIMENSIONS" / IN ELECTRONICS AND DATA PROCESSING SYSTEMS

For the Comptroller...

A new concept in data handling

RCA 501

Electronic Data Processing System

Automation in its most modern and practical sense comes to the aid of the armed forces comptroller with the introduction of the RCA 501—an all-transistor data handling system of moderate size that permits gradual expansion without disturbing the basic installation or change in programming approach. Lighter, smaller, requiring a minimum of power and cooling, the RCA 501 is a full-scale system that is highly advanced in every phase of electronic data processing.

Attracted by its features, the

Army, Navy and Air Force, as well as several government agencies, have ordered the RCA 501. And orders have been received from leaders in such diverse fields as banking, insurance, manufacturing, public utilities and others.

The RCA 501 may be seen in full-scale daily operation at the RCA Electronic Data Processing Center, Cherry Hill, N.J. To arrange for a visit or for further information, write: Radio Corporation of America, Electronic Data Processing Division, Camden 2, N. J.



RADIO CORPORATION of AMERICA

